The Missing Link:
Explaining the Absence of War over Water in the Middle East

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Abstract

‘War over water in the Middle East’ was for many years a popular prediction among social scientists. A water-war however has yet to occur anywhere in the world. In this thesis I focus on the case of Jordan, Israel and the occupied Palestinian territories and their shared water resources. I analyze the empirical evidence with the aim of investigating whether a neo-realist or a neo-liberal explanation for the absence of war over water finds most support. The main finding of this research project is that water not having been considered a ‘high politics’ issue by Israel and thus not a resource worth fighting over, is the strongest explanatory argument for stability. Although all three Parties strongly value the dialogue established under the umbrella of the Multilateral Working Group on Water, the cooperation has few results to show for, a fact which constitutes a second indication that water is not a sufficiently important resource worth making sacrifices for.

Acknowledgements

Having reached the point of typing down my acknowledgements I can finally confirm that I see the light at the end of the tunnel, and the tunnel has indeed felt long. Blood, sweat and tears have been shed, but not only my own. In my opinion the 1960s' feminist slogan 'Behind every successful man, there is a great woman' can with high validity be transferred (and translated) to the world of master thesis-writing: Behind every master thesis, there is the hard work of a bunch of people.

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Despite the great efforts of the above mentioned persons, any errors, mistakes or misinterpretations are solely my responsibility.

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1 Introduction

1.1 Water

> When the well is dry, we know the worth of water (Benjamin Franklin 1746).

75% of the Earth's surface is covered by water, which is found mostly in oceans and other large water bodies. Only 2.5% of the Earth's surface water is fresh water, fit for human consumption. Of this 2.5% only 0.5% is available ground water and 0.01% is the readily accessible water in lakes, streams and rivers. The rest is located in ice caps (EWG 2011; Graham et al. 2000). Water on Earth moves continually through a cycle of evaporation, precipitation, and runoff usually reaching the sea. Freshwater which is the only potable water type naturally accessible to humans exists only in limited amounts. This in combination with factors such as population growth, pollution and droughts caused by climate change, has caused water shortages in several regions in the world. The excerpt below, from a 2009' UNESCO report, illustrates the situation of water stress.

Box 1.1.1 "UNESCO: Water in a Changing World"

The amount of freshwater on Earth is finite, but its distribution has varied considerably, driven mainly by natural cycles of freezing and thawing and fluctuations in precipitation, water runoff patterns and evapotranspiration levels. That situation has changed, however. Alongside natural causes are new and continuing human activities that have become primary 'drivers' of the pressures affecting our planet's water systems. These pressures are most often related to human development and economic growth.

History shows a strong link between economic development and water resources development. There are abundant examples of how water has contributed to economic development and how development has demanded increased harnessing of water. Such benefits came at a cost and in some places led to increasing pressure on the environment and increasing competition among users. Our requirements for water to meet our fundamental needs and our collective pursuit of higher living standards, coupled with the need for water to sustain our planet's fragile ecosystems, make water unique among our planet's natural resources.

Important decisions affecting water management are made outside the water sector and are driven by external, largely unpredictable drivers – demography, climate change, the global economy, changing societal values and norms, technological innovation, laws and customs, and financial markets. Many of these external drivers are dynamic and changing at a faster pace. Developments outside the water domain influence water management strategies and policies. Decisions in other sectors and those related to development, growth and livelihoods need to incorporate water as an integral component, including responses to climate change, food and energy challenges and disaster management

(Source: UNESCO 2009: xix).

1.2 Water Stress in the Middle East

The Middle East is regarded as the region in the world suffering the most from water scarcity (Brown & Crawford 2009). The high population growth rates in the region place a tremendous strain on the availability of freshwater for human consumption and economic development. Most of the countries in the Middle East can be described as "water poor". Kuwait and the Gaza strip are the most water poor places in the world with approximately 50 m^3 available per person per year[1]. The demand for water resources for basic needs, agricultural purposes, and industrial uses will according to Brown and Crawford outpace the supply of renewable water resources in the Middle East within the next few decades (2009).

As water scarcity increases and the quality of existing resources decreases, states have been forced to either augment their water supply, which has created an incentive for some upstream states to harness their water supplies through building dams to the disadvantage of downstream states (which are heavily dependent upon these same water resources for agricultural purposes) or to over pump their existing resources, which has created negative externalities for the downstream users. This competition over resources has, according to the Nordic Consulting Group turned water into one of the main strategic resources in the Middle East (2004: 84).

The water resources in the region have a transboundary characteristic. There are numerous shared rivers and groundwater basins (e.g. Tigris River, Euphrates River, Nile River, Jordan River, and the three aquifers underlying the West Bank, the Coastal aquifer, the Disi aquifer, and the Nubian sandstone aquifer). Every major river in the region crosses an international border, and most of the aquifers are shared by at least two states (NCG 2004). This complicates the situation of water stress further because of the externalities produced by transnational use of the resources.

[1] According to the UN threshold a country/an area is defined as suffering from water scarcity if freshwater access per person per year is less than 1000 cubic metres (United Nations, World Resources Institute 2007).

Water management in the Middle East is also made more difficult by the lack of knowledge and information required for decision-making and long-term planning. Few countries know how much water is being used and for what purposes, the quantity and quality of water that is available and that can be withdrawn without serious environmental consequences and how much is being invested in water management and infrastructure (UNESCO 2009: 18).

1.3 War over Water in the Middle East?

As environmental issues and resource management found their place on the political agenda at the end of the Cold War, the aggravating water situation along with the regions' conflictual history led several scholars to predict the outbreak of wars over water in the Middle East. The comprehensive literature predicting such outcomes convinced political leaders and international actors across the globe, and still has implications for policy development – as illustrated by the excerpts below from the 2009' UNESCO water report, and the 2008' Ban Ki-moon speech:

> Water is linked to the crises of climate change, energy and food supplies and prices, and troubled financial markets. Unless their links with water are addressed and water crises around the world are resolved, these other crises may intensify and local water rises may worsen, converging into a global water crisis and leading to political insecurity and conflict at various levels (UNESCO 2009: xx).

Box 1.3.1 Speech by UN Secretary-General Ban Ki-moon in 2008

'The challenge of securing safe and plentiful water for all is one of the most daunting challenges faced by the world today.'

'Until only recently, we generally assumed that water trends do not pose much risk to our businesses. While many countries have engaged in waste-water treatment and some conservation efforts, the notion of water sustainability in a broad sense has not been seriously examined.'

'Our experiences tell us that environmental stress due to lack of water may lead to conflict and would be greater in poor nations.'

'Ten years ago – even five years ago – few people paid much attention to the arid regions of western Sudan. Not many noticed when fighting broke out between farmers and herders, after the rains failed and water became scarce.'

'Today everyone knows Darfur. More than 200,000 people have died. Several million have fled their homes. 'There are many factors at work in this conflict, of course. But almost forgotten is the event that touched it off – drought. A shortage of life's vital resource.'

'We can change the names in this sad story. Somalia. Chad. Israel. The occupied Palestinian territories. Nigeria. Sri Lanka. Haiti. Colombia. Kazakhstan. All are places where shortages of water contribute to poverty. They cause social hardship and impede development. They create tensions in conflictprone regions. Too often, where we need water we find guns. . . .'

(Source: Ban Ki-moon 2008)

More recent research however has shown that war or conflict over water is not a very probable outcome of water scarcity. Water scarcity actually leads to cooperation more often than to conflict or tension between states (Beaumont 1996: 356; Wolf 1998; Yoffe & Wolf 1999; Alam 2002; Waterbury 2002; Priscoli and Wolf 2009: 11). This issue is at the essence of my research project: Why is it that in the region in the world suffering the most from water scarcity, where states have exhibited little reluctance towards going to war over almost any issue, we still haven't seen the outbreak of a war over water?

In order to address this question the research project focuses on water management in Jordan, Israel and the occupied Palestinian territories[2]. Meanwhile, I wish to emphasize that I will not attempt to conduct an exhaustive study analyzing all possible explanations for the absence of war over water. The theoretical focus will be on central theories within the field of International Relations, and the empirical focus will be on the perceptions of central political

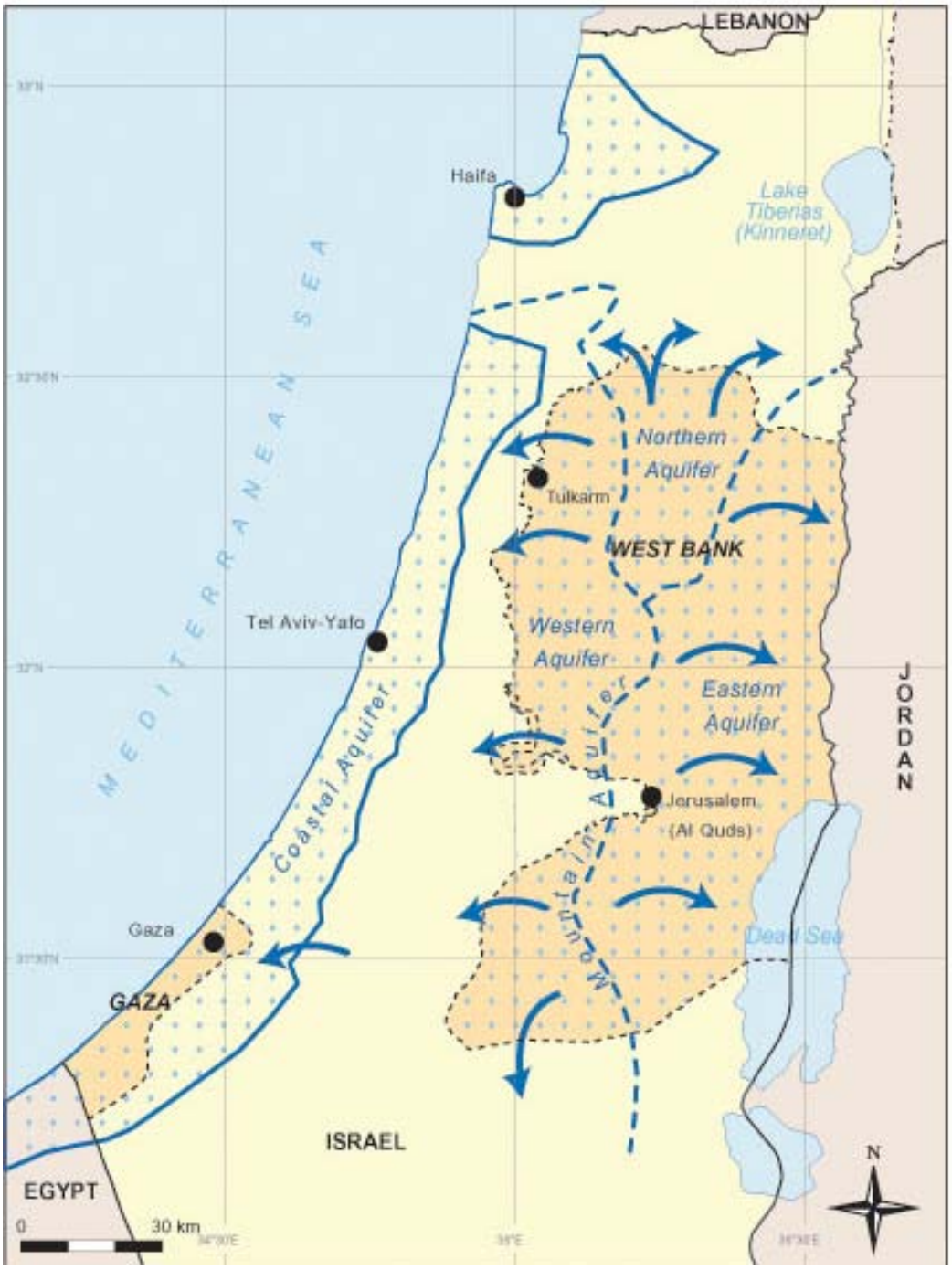
[2] The occupied Palestinian territories will throughout the paper be referred to as the oPt.

actors in the region. An assessment of the water resources shared by the three entities Jordan Israel and the oPt follows in the section below.

1.4 Water Scarcity in Jordan, Israel and the Occupied Palestinian Territories

The water sources in the West Bank are the renewable waters of the mountain aquifer that rises and outcrops in the West Bank but extends across and below the territories of Israel (see map 1.4.1 “Mountain and Coastal Aquifers in the Jordan River Basin”). The main recharge acceptance area is located in the core of the West Bank where water originating at altitudes above 400 meters feed the major aquifers in the area. The groundwater recharge in the West Bank is the direct infiltration of rainwater through fractured, karstic rocks and porous soils. The overall balance in the West Bank is estimated to be 679 million cubic metres (mcm) per year, while in the Gaza Strip it is estimated at 50 mcm per year. The Gaza aquifer, which is a classical coastal aquifer, represents the sole water source of the Gaza Strip covering an area of 360 km². The Gaza aquifer is threatened by seawater and salt ground water intrusion due to over pumping, and by pollution (NCG 2004: 85).

Map 1.4.1 Mountain and Coastal Aquifers in the Jordan River Basin

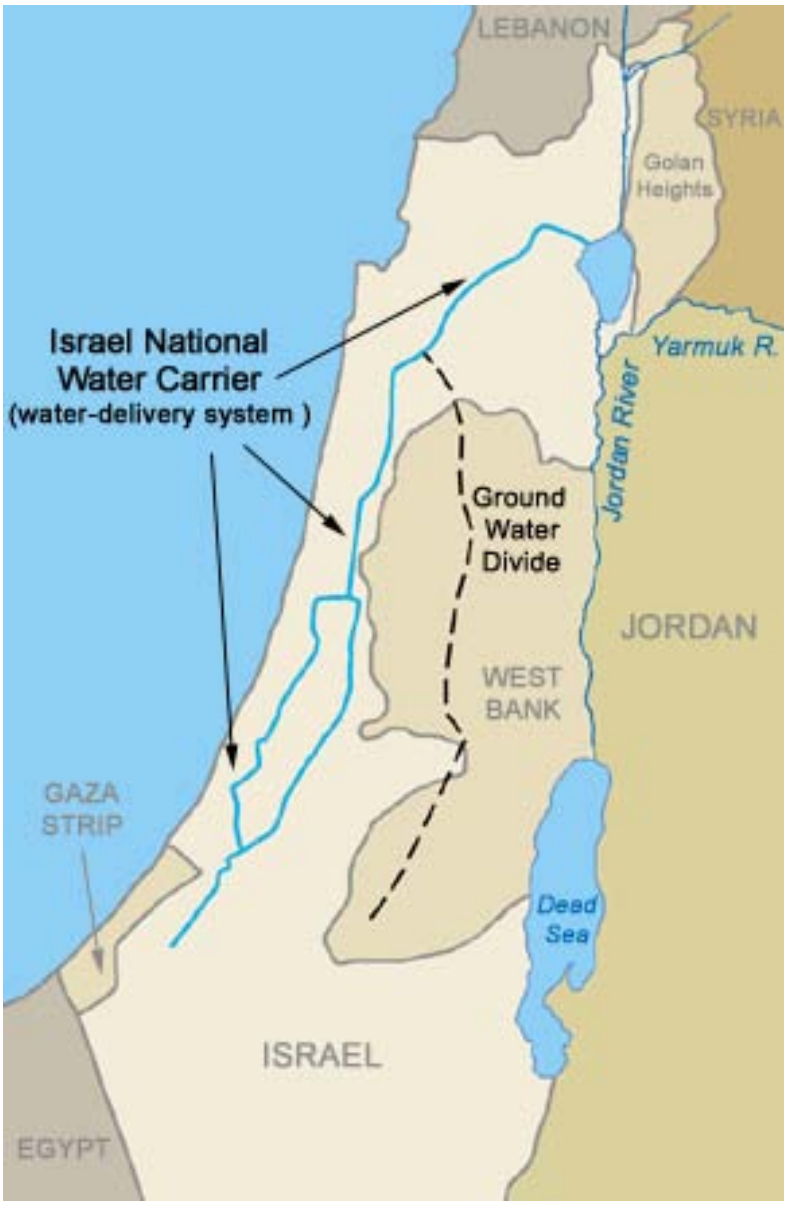


(Source: UNEP 2002)

The Jordan River has an annual flow of 1300 mcm. The main rivers in Jordan are the Jordan, the Yarmouk, and the Zarqa. While the availability of water in the Jordan and the Yarmouk River is good, the Zarqa River, flowing entirely within Jordan's borders, faces a pollution crisis that prohibits both access to and the use of its waters.

After the establishment of the Jewish state in 1948, the main target of the Israeli water plan was to divert as much water outside the Jordan River basin into a central conduit leading through the coastal plain up the northern Negev. The National Water Carrier (see map 1.4.2 “The Jordan River and the Israeli National Water Carrier”), a pipeline transporting water from the Sea of Galilea/Lake Tiberias in the north, to the highly populated and arid south, was opened in 1964. The National Water Carrier was the outcome of long term planning, its first stages implemented in 1948. One of the major outcomes of the 1967 war was the annexation of large parts of the headwaters of the Jordan River by Israel, and the subsequent loss to Jordan of a significant amount of its available water supply. A key issue concerning water resources between the three countries has been the Israeli policy of restricting water allocations and water use in the West Bank and the Gaza Strip, which deprives the Palestinian population of their basic human rights for adequate water, both in quality and quantity (NCG 2004: 85).

Map 1.4.2 The Jordan River and the Israeli National Water Carrier



(Source: Hudes 1999)

The Jordan River begins in three headwaters. The Hasbani River, which originates in Syria with parts of its flow in Lebanon and has an average flow of 140 mcm/year. The Dan and Bania Rivers both originate in the Golan Heights and flow into the Jordan River above Lake Tiberias with average annual flows of 250 and 120 mcm respectively. The lower Jordan River is fed from groundwater flow and runoff from the West Bank, Syrian and Jordanian waters,

and by the Yarmouk River, which originates in Syria, borders Jordan, Syria and the Golan Heights, and has an average flow of 420 mcm/year. In 1953 US special envoy to the Middle East, Ambassador Eric Johnston, proposed an allocation scheme based on proposals negotiated between the Ottoman Empire and the US before WWI. Johnston's Jordan Valley Plan was the product of his negotiation with representatives of Israel, Lebanon and Syria for 24 months, which finally in 1955, led to a unified plan that in his view reconciled the demands of all the riparians. The plan was never adopted or ratified (Soffer 1994).

In 1994 a peace treaty was established between Jordan and Israel. Allocation of water resources was one of the major issues of the Treaty. The Treaty also stipulates that Israel will help Jordan to find new sources of water, to build a system of water storage on the Jordan River and the dams of the River, and to divert more water from the Yarmouk River towards Jordan (NCG 2004: 87).

1.5 Outline of the research project

In Chapter 2 "Theoretical Approach" I discuss the theories of the 1980s and 1990s' dominant approach that water scarcity leads to "water wars". In this chapter I also briefly assess the current conditions in the Middle East, which can be said to represent the most prominent case of the combination "water scarce and conflict prone region". Thomas Homer-Dixon (1999) is one of the authors presented in Chapter 2. He argues that under a special set of conditions related to the direction of water flow and the power relations between the upstream/downstream party the probability for outbreak of a conflict is high. The case of bilateral relations Israel-the Palestinian Authorities (PA)[3] meets all of Homer-Dixon's conditions, and can thus be said to represent a "most likely"-case for conflict over water. In reality however no such conflict has actually occurred, instead the three Parties Israel, the PA and Jordan are part of a multilateral cooperation on water resources. This fact leads us to the research question: How can we explain the absence of war over water in the Middle East?

[3] The Palestinian National Authority (PNA/PA) will be referred to as the PA throughout the paper.

In chapter 2 I also assess some of the possible explanations for this absence of war, with arguments based in neo-liberal theory that trade, treaty and technology have made war over water resources anachronistic. To conclude the theoretical framework presented in chapter 2, I present two hypothetical explanations for the absence of war over water. The first (H1) being that water is not a sufficiently important issue to go to war over in a region where high politics dominate, and the second (H2) being that water is a resource which is fundamentally too important for people's survival to go to war over.

In Chapter 3 "Methodological Approach" I outline the method I will use to examine which of the hypothetical explanations finds support in the empirical evidence. The chapter commences with a brief presentation of the main affinities and inconveniences linked to the case study as a method used for examining the research question. This first part is followed by a discussion of why the case under study to some extent can be used to say something general about the Middle East as a region, as well as an assessment of the "pros and cons" of using method triangulation with interviews and content analysis to address the research question. Chapter 3 is concluded with a note on the validity and reliability of the study.

In Chapter 4 I proceed to the actual analysis of the data material. I give a short presentation of the Multilateral Working Group on Water which is a forum where Israeli, Palestinian and Jordanian representatives meet twice per year to discuss issues related to freshwater resources and wastewater treatment. I also give a presentation of the representatives with which I have conducted interviews, as well as their relation to their respective authorities' water management institutions. The analysis concentrates around an assessment of the empirical evidence with H1 and H2 as base arguments. To conclude the analysis I argue that the actual explanation for the absence of war over water in the Middle East is situated somewhere between H1 and H2 as the explanation draws on both neo-liberal and neo-realist arguments, but that H1 finds stronger support in the empirical evidence than H2.

In Chapter 5 "Conclusion" I sum up the most important findings and provide some advice for future research.

2. Theoretical Framework

> Evidence is fast accumulating that, within our children's lifetimes, severe droughts, storms and heat waves caused by climate change could rip apart societies from one side of the planet to the other. Climate stress may well represent a challenge to international security just as dangerous – and more intractable – than the arms race between the United States and the Soviet Union during the cold war or the proliferation of nuclear weapons among rouge states today (Homer-Dixon 2007: 1).

The citation is taken from a polemic article in the New York Times in 2007, written by Thomas Homer-Dixon. He claims that there is "Terror in the Weather Forecast" and warns that the potential impact of climate change on food output is a particular concern; in semiarid regions where water is already scarce and cropland overused, climate change could devastate agriculture. He predicts that this will undermine already frail governments, and reveal how incapable these are of helping their citizens. Accordingly, the ultimate result will be insurgencies, genocide, guerilla attacks, gang warfare and global terrorism (Homer-Dixon 2007: 2).

Thomas Homer-Dixon does not stand alone in predicting pessimistic consequences of water scarcity. The same year that he published "Terror in the Weather Forecast", Secretary-General of the United Nations, Ban Ki-moon told delegates from across the Asian-Pacific region that the planet faced a water crisis especially troubling for Asia, and that "a struggle by nations to secure sources of clean water will be "potent fuel" for wars and conflict" (Lewis 2007). Ban Ki-moon was however not the first UN Secretary-General to predict a "water war". In 1985 the Egyptian Foreign Minister Dr Boutros Ghali famously stated that "the next war in the Middle East will be fought over water, not politics", and he repeated this claim during his period as Secretary-General for the United Nations from 1992-1996 (BBC 2003). According to Boutros Ghali it was particularly population growth that would put further strain on water supplies and thus create a potential for disputes in the Middle East. Another predecessor to Ban Ki-moon and Homer-Dixon, Ismail Serageldin, the World Bank Vice President at the time, in 1995 famously prophesied that "[i]f the wars of this century were fought over oil, the wars of the next century will be fought over water".

A look back into history shows that the issue of conflict over scarce resources is not a recent phenomenon. Genesis 26:17-18 in the Old Testament tells us something about how crucial access to freshwater was to farmers more than 3000 years ago:

> The desolate Gerar area was located on the edge of a desert. Water was as precious as gold. A person who dug a well was staking a claim to the land. Some wells had locks to keep thieves from steeling the water. To fill in someone's well with dirt was an act of war; it was one of the most serious crimes in the land.

The Oxford Dictionaries etymology of the world "rival" follows in the same path as the Old Testament, indicating that shared freshwater rivers have been a source of conflict for several hundred years:

> **Rival. –noun:** a person or entity that is in a position to dispute another's pre-eminence or superiority. Origin: 1570–80; Latin: rīvālis. Originally; one who uses a stream in common with another, equivalent to rīv (us) stream + -ālis (Oxford Dictionaries)

Meanwhile, the assumption that resource scarcity represents a highly potential source of conflict is more than a historical myth, or scare tactics by UN high officials. The claims also find support in the research literature on the field. In the following sections I present the main arguments from the Environmental Security and the Water-War literature, as well as the Neo-Malthusian perspectives on the potential consequences of resource scarcity. I also discuss possible explanations for why, despite the research literature's pessimistic predictions, there has been no war over water in the Middle East.

2.1 Environmental Security

Environmental security is one of a number of 'new', non-traditional security issues that have served to deepen and broaden the concept of security during the last decades. It emerged as an

important concept in security studies due to interrelated developments beginning in the 1960s. First environmental movements in developed countries managed to raise the profile of environmental issues and contest the practices of national security. Secondly, their claims that environmental problems demand common security approaches were recognized by scholars in political science and security studies. Thirdly, by the end of the Cold War and with the switch in the world order from a bipolar to a hegemonic system, a strategic vacuum appeared which permitted environmental issues to be put on states' security agendas (Barnett 2007: 200, Gleditsch & Diehl 2001: 252). Environmental issues were also recognized through a growth in multilateral environmental agreements (Barnett 2007: 200).

Even though "environmental security" has been an important concept in security studies since the 1990s, the term remains ambiguous (Barnett 2007: 200). There are many different interpretations of environmental security stemming from the numerous approaches to security and the even broader range of approaches to environmental change. The most commonly used definition however, is the approach that environmental change undermines human security:

> The most influential interpretations of environmental security are those that fit well with the orthodox security paradigm. In particular, arguments that environmental change may be a cause of violent conflict between and within countries, and suggestions that environmental problems in other countries are threats to national security, have all largely been accepted by the security policy community and the armed forces – especially in the United States (Barnett 2007: 200).

Political ecologists were early in arguing that environmental issues should be considered a security matter. In 1971 Harald and Margaret Sprout published "Toward a Politics of the Planet Earth" where they explain the ecological way of comprehending international politics; "a system of relationships among interdependent, earth-related communities that share with one another an increasingly crowded planet that offer finite and exhaustible quantities of basic essentials of human well-being and existence" (Sprout & Sprout 1971: 14). According to the political ecologists individuals and populations interact with the environment in patterns that constitute a system; an ecosystem. Any serious disruption anywhere in the earth's "ecosystems" is likely to produce injurious consequences for the human inhabitants as well as for the subhuman species with which humans share the earth (Sprout & Sprout 1971: 15).

The Sprouts also argued that the security threats that environmental degradation represents will put a heavy strain on states' national security budgets (1971: 406).

Richard Falk was another early adherent to the idea that environmental degradation should be considered a security issue. In his book "This endangered planet", he stated that "We need to revamp our entire concept of "national security" and "economic growth" if we are to solve the problems of environmental decay" (1971: 185). Furthermore he emphasized that states would not be able to solve the problems of environmental decay on their own, arguing that some coordination between them would be fundamental (1971: 196).

Several of the early writers on the connections between environmental change and violence borrowed heavily from realist international relations theory and focused on the link between resource scarcity and the possibility for conflict between and tension within states. Lester R. Brown (1977) was one of the first to point to the risks of climate change negatively affecting agricultural production and global food supplies. Brown stated his concern that "[i]t is also quite possible that food scarcities and soaring food prices may contribute more than any other factor to political instability" (1977: 30). Basing their arguments on realist assumptions that economic globalization can accentuate existing differences in societies, creating instability in strategic regions and thereby challenging the world order, the early Environmental Security theorists argued that "the pressure engendered by population growth in the Third World is bound to degrade the quality of life, and diminish the range of options available, to governments and persons in the rich countries" (Ullman 1983: 143).

In his article "The Environmental Dimension to Security Issues" published in 1986, Norman Myers continues in the same line as Falk and Ullman stating that environmental stability underpins our material welfare and thus represents a security issue:

> If a nation's environmental foundations are depleted, its economy will steadily decline, its social fabric deteriorate, and its political structure become destabilized. The outcome is all too likely to be conflict, whether conflict in the form of disorder an insurrection within the nation, or tension and hostilities with

> other nations. We can surely expect that this new scope for conflict will expand as increasing numbers of people seek to sustain themselves from declining resource stocks (Myers 1986: 251).

The argument that environmental problems should be considered a security issue did not seem to lack support in the political science literature at the end of the 20th century. The Correlates of War Data Project (2007) indicates that over 80% of interstate wars are among neighbors. In his 1995' article "Why Do Neighbors Fight?", John A. Vasquez explains that war between states is generally a result of territorial disputes: "The situation that states in the modern global system are most likely to deal with by the use of force and violence is one in which their territory is threatened" (1995: 281). Claims over territory mean access to an economic zone, raw materials, sources of energy, water and food (Vasquez 1995: 282; Gleditsch & Diehl 2001: 252). The territorial explanation for interstate war can thus be said to provide support for the Environmental Security theorists' claim that resource scarcity is a potential source of conflict. Some scientists have developed this thesis even further, claiming that it is not only territorial disputes or environmental degradation in general which should be considered a threat to national security, it is more precisely the strive for access to freshwater resources that will cause war between states. This approach is often referred to as "the Water-War literature" in political science.

2.1.1 The Water-War Literature

There are several arguments for why war over water is a probable outcome of water scarcity. The writers within the water-war approach usually base their assumptions on one or several of the following arguments (Lonergan 1997: 376):

- Water is the basis for all life on this planet;
- Water is essential for human survival and for the production of food;
- Water is crucial for economic development, and in some countries is one of the highest valued inputs to the national economy;
- The freshwater resources of the globe are finite and vulnerable;

- Water “moves”, and therefore its use may affect more than one nation;
- Globally, much freshwater is far removed from sources of demand.

In 1984 John Cooley argued that the struggle over freshwater resources of the Jordan, Litani, Orontes and the Yarmuk had been one of the principle causes of the 1967 Arab-Israeli war. According to Cooley, the Arabs had unsuccessfully tried to divert the Jordan River headwaters feeding into Israel. Cooley also predicted that at the time of writing, the primary threat of war stemmed from Israel’s occupation of southern Lebanon, which gave Israel control over the lower reaches of the Litani. In this same line he also claimed that many of the problems and the tensions between countries in the Middle East stem from their shared freshwater resources, and the fact that “all of the water development plans of the region’s countries depend on tapping the region’s rivers” (1984: 10). This corresponds to the neo-realist view that states will seek to maximize their relative gains, and reduce dependence on others. Accordingly, Cooley stated that

> (…) to the Arabs in the 1950s, the National Water Carrier became a symbol of Israel’s aggressive expansionism. As early as 1953, Syrian artillery units opened fire on the construction and engineering sites behind the town and lake of Tiberias, forcing the Israelis to move the main pumping station (1984: 10).

He also predicted that “Long after oil runs out, water is likely to cause wars, cement peace, and make and break empires and alliances in the region” (1984: 10).

In 1991 Joyce R. Starr followed in Cooley’s tracks, with the publication of an article entitled “Water Wars”. Starr equally claimed that there is a pertinent risk of war over water in the world, as the problem of water scarcity is aggravating. According to Starr, the Middle Eastern region is especially exposed to an eruption of war because of its characteristics as a region already prone to conflict, suffering largely from the lack of access to clean water. She pointed out the end of the Gulf war as a potential time for the outbreak of war over water (1991:19). She also claimed that the past record of disputes over water in the region is evident, and she

especially mentioned a situation in 1975 where “Iraq and Syria came to the brink of war over Syria’s reduction of the flow of the Euphrates to fill the Ath-Thawrah Dam” (1991: 31).

In the same line as Cooley and Starr, Arun Elhance summarizes why, in a neo-realistic perspective, scarcity of natural resources may lead to interstate conflict;

> By itself scarcity of natural resources does not necessarily lead to interstate conflict (…). It is when such a resource is rightly or wrongly perceived as being overexploited or degraded by others at a cost to oneself, that states may become prone to conflict (1999: 4).

2.2.2 The Neo-Malthusian Approach

Another perspective which has gained support during the last decade is the Neo-Malthusian approach to resource scarcity and conflict. Neo-Malthusianism originated from the ideas of Thomas Robert Malthus who argued that population growth is geometric whereas agricultural growth is arithmetic; therefore, population growth will increase at such a rate that eventually there will not be enough food for the population (Malthus 1998; Gleditsch & Diehl 2001: 252). Today Neo-Malthusianism is used as a label for scientists who are concerned that overpopulation may increase resource depletion or environmental degradation to a degree that is not sustainable, possibly resulting in ecological collapse or other hazards.

The relationship between population, environmental change and violent conflict was systematically explored by Thomas Homer-Dixon (1999) through the Toronto project and Guenther Bächler (1999) through the ENCOP (Environment and Conflict Project). Their basic assumption was that the growing level of resource scarcity and specifically water scarcity will increase competition in face of a growing population, eventually becoming a trigger for resource conflict (Homer-Dixon 1999; Bächler et al. 1999; Gleditsch 1997: 94). Homer-Dixon presented a model explaining how environmental scarcity and its social effects can cause both rural and urban violence. He argues that the genesis of scarcity and scarcity’s main negative social effects contribute to violent conflict, and explains this by referring to group-

identity theories and structural theories. He identifies three main kinds of conflict that might arise from environmental scarcity: simple-scarcity conflicts, group identity conflicts, and insurgencies (1999: 137). He also proposes a set of conditions, which if present highly increases the potential for conflict:

> Wars over river water between upstream and downstream neighbors are likely only on a narrow set of circumstances: the downstream country must be highly dependent on the water for its national well-being; the upstream country must be threatening to restrict substantially the river's flow; there must be a history of antagonism between the two countries; and, most importantly, the downstream country must believe it is military stronger than the upstream country. Downstream countries often fear that their upstream neighbors will use water as a means of leverage. This situation is particularly dangerous if the downstream country also believes it has the military power to rectify the situation (Homer-Dixon 1999: 138).

Homer-Dixon also provides a typology of the causes of resource scarcity. He applies a threefold definition consisting of supply-induced, demand-induced and structural scarcities (1999: 48). Supply-induced scarcity occurs as a result of decline in the quantity or quality of a renewable resource. Demand-induced scarcities arise with resources that are rivalrous. A good or resource is rivalrous when its use by one economic actor reduces its availability for others. Water scarcity is by Homer-Dixon considered to be such a demand-induced scarcity. Structural scarcities arise primarily with resources that are excludable, which means that property rights or other institutions can be used to prevent access to the resource by some actors (Homer-Dixon 1999: 48). Particularly relevant here is the demand-induced type of scarcity: "Demand-induced scarcity is a function of population size multiplied by per capita demand for a given resource; an increase in either population or per capita demand increases total resource demand" (Homer-Dixon 1999: 51). According to Homer-Dixon (1999: 73) the three kinds of environmental scarcity often interact, and two patterns of interaction are particularly common: *resource capture* and *ecological marginalization.* Resource capture occurs when a fall in the quality and quantity of a renewable resource interacts with population growth to encourage powerful groups within a society to shift resource distribution in their favor. This shift can produce dire environmental scarcity for poorer and weaker groups in society. Accordingly, the social effects of environmental scarcity can substantially increase the probability of violence in developing countries (Homer-Dixon 1999: 80).

2.3 Assessing the Middle Eastern Conditions

The Middle East has for the last 60 years been the most conflict prone region in the world[4]. The Israeli-Palestinian conflict has functioned as an underlying cause for strategic alliances between Arab countries against the state of Israel. Israel who is military superior to most of its Arab neighbors has with the support of the US not hesitated to attack or retaliate to attacks[5]. The existential conflicts, territorial disputes, denials of legitimacy along with a fundamental asymmetry, have made the Middle East a region where "high politics" set the standard for bilateral relations which have generally been characterized by instability and competition (Steinberg 2005). During the first quarter of 2011 the Arab countries have seen uprisings and popular revolt spreading throughout the region, caused by the population's dissatisfaction with authoritarian rule dominant in these countries for the last 60 years.[6] More than six decades of conflict have taken a heavy toll on the region; tens of thousands of lives have been lost[7]; roads, wells and power grids have been destroyed; businesses, schools and hospitals have closed, and farmers have been cut off from their fields. Products cannot reach markets, and trade between several countries is severely hindered. Most of the governments in the Middle East prefer spending money on weapons and armies, rather than on social services for their populations (Brown & Crawford 2009: 11).

The Euphrates River, the Nile and the Jordan River have all seen water related tensions over the past decades, and the importance of water to the region was emphasized during the peace process initiated in the 1990s, in which water was one of five key topics identified for multilateral discussions[8] (Lonergan 1997: 378).

[4] The UCDP/PRIO Armed Conflict Dataset has 259 conflict registered for the Middle East region from 1946-2009.
[5] E.g when the killing of two Israeli soldiers, and the capture of one by Hamas in June 2006 led to a massive reprisal that killed dozens of Palestinians and destroyed essential infrastructure throughout Gaza (Mearsheimer & Walt 2006: 39).
[6] Since independence from colonial rule by Great Britain and France, which for most countries in the Middle East took place during the years following WWII.
[7] 60 of the 259 conflict registered in the UCDP/PRIO Armed Conflict Dataset are listed as wars with more than 1000 battle deaths.
[8] See chapter 4 for a presentation of the multilateral discussions.

The Middle East is also the region in the world suffering the most from water scarcity (Brown & Crawford 2009: 6). Jordan, Israel and the oPt all fall well below the accepted threshold for water scarcity of 1,000 cubic metres per person per year. According to the IPCC[9], Israel has available natural renewable water resources of 265 m^3, Jordan 169 m^3 and the oPt 90 m^3 (Brown & Crawford 2009: 11; Boko et al. 2007). Only Lebanon with 1,220 m^3 and Syria with 1,541 m^3 fall above the water scarcity threshold. The countries in the region are already using a very high percentage of their available water resources. The Middle East withdraws the world's highest proportion of its total renewable water resources (Brown & Crawford 2009: 11). The relative lack of rainfall means there is a heavy reliance on groundwater and manufactured (i.e. desalinated) water. By 2020 it is predicted that water shortages will be the norm, with water requirements projected to be 130 per cent of renewable supplies for Israelis, 120 per cent for Jordanians and 150 per cent for Palestinians. In Lebanon water demand is expected to outstrip supply by 2015 (Brown & Crawford 2009: 11). This means that without large-scale desalination, improved water efficiency or possibly international transfers of water, the region's renewable water resources will be unable to provide for everyone's needs.

The situation is further complicated by the fact that a high proportion of water in the region is transboundary. The Jordan River, which is a crucial water source for Israel, the oPt and Jordan, is supplied by tributaries in Lebanon and Syria. More than four-fifths of the renewable water resources in Syria originate from outside its borders. Jordan shares the Azraq Aquifer with Syria, and the Disi Aquifer with Saudi Arabia.

Control over water resources has been a central issue for Israel ever since the establishment of the Jewish state in 1948. The existence of the state of Israel is to a considerable degree, the product of the Zionist movement's concerns for the security and survival of world Jewry, given irreversible momentum with the rise of Nazism in central Europe in the 1930s. Unrestricted access to water resources has always been perceived as a non-negotiable prerequisite for the survival of a Jewish national home, as the idea of rural agricultural settlement is a central part of Zionist ideology (Lowi 1993: 123; Galnoor 1980). During the last decades, and as revealed in the Israeli Comptroller report of 1990, the Israeli water

[9] IPCC: the Intergovernmental Panel on Climate Change.

subsidy policy has come to constitute a major economic burden on the Israeli Government. The main guidelines of Israeli water policy have consisted of under pricing, distorted and discriminatory pricing, and gross misallocation among water users (NCG 2004: 24). Beaumont (1997) describes the Israeli water policy as "water piracy". He claims that the Israeli authorities are using real or implied force to gain access to water which according to international law does not belong to it. One example is the use of the waters of the Yarmouk River on the borders of Syria, Jordan and Israel. For many years Jordan planned to utilize the waters of the Yarmouk to supply the East Ghor canal. To do this properly would require the construction of a diversion and storage facility in the lower part of the Yarmouk catchment. This would have to be constructed on land outside of the state of Israel. Israel however, on several occasions used military power to disrupt any such construction on the dam whenever this was attempted by Jordanian Authorities. The result being that the water which Jordan had hoped to use continued to flow downstream and was "captured" by Israel for its own use (Elmusa 1995: 63).

A second example of Israeli "water piracy" or Israeli "resource capture strategy"[10] is the extraction of groundwater. Since the Israeli invasion and occupation of the Palestinian West Bank in 1967, the Arab inhabitants of the region have been severely limited in terms of their water resources. Due to the geological nature of the region and the predominance of limestone, most of the region's water resources take the form of groundwater. From a hydrological point of view, a large proportion of the water that falls on the West Bank makes its way westwards through the ground to emerge in springs in Israel. Beaumont (1997) explains that this in effect becomes an "upstream/downstream" situation. The Palestinian West Bank is the upstream region where the precipitation is collected and put into the ground, while Israel is the downstream nation where the water emerges. Over the years, Israel has continued to extract the water that falls on the Palestinian West Bank without any reduction in volume. The Israeli military regime that has occupied the West Bank since the invasion in 1967 has restricted the Palestinians use of groundwater through limiting the numbers of wells they are allowed to drill, by limiting the amount of water they are allowed to pump, as well as the times during which they can draw irrigation water (Homer-Dixon 1999: 75; Beaumont 1997: 369). Due to these restrictions on water use at the West bank, a large proportion of the

[10] As Homer-Dixon (1999: 75) labels it.

water falling here penetrates the ground and then flows westwards into Israel where it can be captured and used (Beaumont 1997: 369; Homer-Dixon 1999: 75). It is also worth mentioning that despite Israeli restriction on West Bankers' water use, the Palestinians living here have on several occasions and to the annoyance of Israeli authorities drilled wells for which they did not have permission.

At the end of his career, Meir Ben Meir, Israel's Water Commissioner from 1981-1991, emphasized the possibility of conflict over water between Israel, the Palestinians, Jordan and Syria. "At the moment, I project the scarcity of water within 5 years," he said before his retirement in '91. "I can promise that if there is not sufficient water in our region, if there is scarcity of water, if people remain thirsty for water, then we shall doubtlessly face war."

Demographic changes and the consequences of these on the patterns of water consumption are factors putting further stress on the water situation in Jordan, Israel and the oPt. A rapid increase in population in all three countries and a marked expansion of Israeli irrigated area since 1949 has increased water demands immensely.

Israeli "water piracy", the Palestinian's "illegal" drilling of wells, population growth and changed patterns of water consumption along with the long term political instability in the region are factors indicating that if there is one region in the world that should be at the brink of a water war, it is the Middle East. Not only does the region already suffer from water scarcity, the situation is expected to worsen in the near future. The general level of tension in the region is high, and state leaders do not seem to have second thoughts about going to war against each other.

The current situation with the shared freshwater water resources of Jordan, Israel and the oPt seems to fit quite well with Thomas Homer-Dixon's "conditions for conflict over water" (described in section 2.2.2). In the case of Jordan-Israel and the Jordan River, Jordan which is the downstream country, is highly dependent on the water in the river for its national well-

being. Israel is substantially preventing the river's flow, and there is a history of antagonism between the two countries, at least until the peace agreement in 1994. The only point where Jordan and Israel do not fit well with the conditions is the point that states that the downstream country "must believe it is military stronger than the upstream country". It is evident to both parties that Israel is the militarily stronger riparian.

The case of Israel-PA however seems to fit even more perfectly with Homer-Dixons conditions if we, like Beaumont (1997), consider the groundwater in an upstream/downstream perspective. Israel which is then the downstream country is highly dependent on the groundwater for its national well-being. Palestinians have, as previously mentioned, during the last couple of years been drilling wells "illegally" to get access to additional water sources. It is also a known problem that the PA has severe sewage problems in the West Bank, and that the groundwater is being polluted. The upstream country is thus restricting, or at least potentially restricting the downstream country's access to water. And lastly, the downstream country (Israel) knows that it is military stronger than the upstream country (the PA). According to Homer-Dixon's conditions a water-conflict should be right around the corner.

2.3.1 The Strategies of International Institutions

The many warnings from central figures in Middle Eastern politics, as well as the research endeavors in the field of Environmental Security seem to have had a significant influence on policy strategies for many western countries, as well as for international organizations such as the United Nations, NATO, the EU and in non-governmental organizations such as the World Conservation Union and Greenpeace (Barnett 2007: 183).

The Obama Administration included measures against the consequences of climate change in their Security Strategy for 2010. The report describes the danger from climate change as "real, urgent, and severe":

> The change brought by a warming planet will lead to new conflicts over refugees and resources; new suffering from drought and famine; catastrophic natural disasters; and the degradation of land across the globe. The United States will therefore confront climate change based upon clear guidance from the science, and in cooperation with all nations—for there is no effective solution to climate change that does not depend upon all nations taking responsibility for their own actions and for the planet we will leave behind (White House 2010 : 47).

In a 2011 report for the International Union for Conservation of Nature we could read that:

> Climate change will increasingly cause storms, droughts, floods and fires and have a severe impact on food production, water availability and ecosystems such as forests and wetlands. A major concern is how rapid climate change will magnify existing environmental stresses and contribute to food insecurity, conflict over resources, and loss of livelihood for millions of people (IUCN 2011).

The EU has developed directives on how to respond to the security threats that climate change represents, and is more specific with regards to the actual concerns of the Union related to climate changes. In a paper from the High Representative and the European Commission to the European Council entitled "Climate Change and International Security" (2008), climate change is described as "a threat multiplier which exacerbates existing trends, tensions and instability:

> The core challenge is that climate change threatens to overburden states and regions which are already fragile and conflict prone. It is important to recognize that the risks are not just of a humanitarian nature; they also include political and security risks that directly affect European interests.

The report states that climate change should be considered a security issue because it potentially fuels a number of threats, including conflict over resources, economic damage and risks to coastal cities and critical infrastructure, loss of territory and border disputes, environmentally-induced migration, situations of fragility and radicalization, tension over energy supply and pressure on international governance. All of these consequences should be considered security issues for the EU since the Union's neighbors include "some of the most vulnerable regions to climate change, e.g. North Africa and the Middle East". Hence,

migratory pressure at the European Union's borders, political instability, and conflicts could increase in the future (European Commission 2008: 6).

The EU report is the one that most clearly states the actual threats that Union member countries are expected to face – notably border pressure from "environmental migrants". North Africa and the Middle East is pointed out as a region especially vulnerable to climate change, and the conviction that the consequences of climate change in the Middle East will be political instability and conflict seems omnipresent. More recent research however, contradicts these assumptions.

2.4 The Facts of the Matter and the Research Question

War over water in the Middle East has been predicted for almost 40 years both by prominent political actors and researchers. Warnings have been issued, and both national and international institutions seem to have been preparing themselves for the outbreak for such a war for several years now. However, no war over water has yet occurred. Not in the Middle East and not anywhere else (Beaumont 1997: 356; Wolf 1998; Yoffe & Wolf 1999; Alam 2002; Waterbury 2001; Priscoli & Wolf 2009: 11).

According to Priscoli and Wolf (2009: 11) a close examination of the cases cited as historic interstate water conflicts shows that there are methodological problems encumbering the results. The problems are notably related to a "looseness of classification" and "paucity of evidence". Only seven minor skirmishes have actually been waged over international waters in modern history (Priscoli & Wolf 2009: 11). No country has yet gone to war solely over water (Beaumont 1997: 356). Conversely, over 3600 treaties have been signed over different aspects of international waters, "many showing tremendous elegance and creativity for dealing with this critical resource" (Wolf & Hamner 2000: 123). Accordingly, war over water is "neither strategically rational, hydrographically effective, nor economically viable" (Wolf & Hamner 2000: 123). Shared interest along a water-way seem to overwhelm waters'

conflict-inducing characteristics, and once water management institutions are in place they tend to induce cooperation and incite violence only in the exception (Wolf and Hamner 2000: 123, Bernauer and Kalbhenn 2010).

Priscoli and Wolf (2009: 14) also highlight the fact that "the historical evidence record shows that international water disputes *do* get resolved, even among bitter enemies, and even as conflicts erupt over other issues. Some of the most vociferous enemies around the world have negotiated water agreements or are in the process of doing so".

> Quantitative studies of resource and environmental issues indicate that these do seem to play a role in interstate as well as in intrastate conflict. However, the influence of such variables is less dramatic than frequently assumed in the political debate, it is mediated by other factors, and it may even at times have the opposite effect of what the environmental literature posits – abundance leading to fighting, scarcity to cooperation (Gleditsch & Diehl 2001: 257).

Today it seems as if few if any scientists point to water or natural resource scarcity as a direct cause of conflict. In spite of the gloomy predictions about the coming wars in water-poor regions, no major 'water war' has yet occurred. Although 28 per cent of tensions over water were conflictive, no formal declaration of war over water has been made, according to research by the University of Oregon. This empirical evidence is rather contradictory to the pessimistic prediction of the eruption of water wars in the Middle East. These "facts of the matter" lead us to the overarching research question:

If the conditions for conflict are fulfilled, how can we explain the absence of war over water in the Middle East?

2.5 The Water Non-conflict Approach: Trade, Treaty and Technology

The lack of empirical evidence to support the water war-thesis has led researchers to look in different directions for explanations. Some have found that liberal ideas (e.g. the ideas of Haas et al. 1993) are more apt for explaining the "missing water wars". In the following sections I present the works of different writers within the water non-conflict approach. These can be divided according to their main explanatory factor for the absence of war: trade, treaty and technology.

2.5.1 Trade

The idea that peace is a positive externality of global commerce is not a recent one. Montesquieu, Kant and Wilson are some of the historical figures who have presented this argument (Montesquieu 1995; Kant 1970; Gartzke et al. 2001: 391). Haas et al. (1993) argue that the anarchic characteristic of the international society does not necessarily imply conflict between states; states actually prefer cooperation to conflict. The main reason for this is that globalization has made "economic interdependence[11]" an intrinsic feature of international relations. Interdependence both raises the economic interest countries have in continuing peaceful exchange and provides a medium of communication that can be useful in preventing or resolving disagreements short of violence (Russett & Oneal 2001: 139). The intertwined global economic system gives each party a stake in the economic well-being of the other and the cost of war renders it anachronistic (Russett & Oneal 2001: 129).

> Countries that are interdependent bilaterally or economically open to the global economy, whether democratic or not, have an important basis for pacific relations and conflict resolution (Russett & Oneal 2001: 155).

[11] According to Keohane & Nye (1973: 160) interdependence can be defined on the process level as "mutal sensitivity: i.e. the extent to which change in one state affects change in others".

Russett & Oneal have conducted aggregated analysis on trade's effect on conflict and found strong support for the assumption that economically important trade significantly constrains the use of force.

> Countries that are interdependent bilaterally or economically open to the global economy, whether democratic or not, have and important basis for pacific relations and conflict resolution (Russett & Oneal 2001: 155).

They also found that the pacific benefits of trade are not reduced by asymmetric economic relations (Rusett & Oneal 2001: 154). Gartzke et al. (2001: 418) adds that the multiple channels of economic interactions help states to communicate in a credible manner, these multiple channels increase the "vocabulary" available to states in attempting to assess relative resolve. When states fail to cooperate, this is often due to misunderstandings and misperceptions. States are "rational egoists" and will cooperate if they have a mutual interest in doing so. Through cooperation, states will seek to maximize absolute gains. States are less concerned with gains or advantages achieved by other states in cooperative agreements.

2.5.2 Treaty

Haas et al. (1993) also claim that environmental institutions can promote changes in national policies and encourage both national and international policies, which address environmental problems. Institutions are seen as persistent and connected sets of rules and practices that prescribe roles, constrain activity and shape the expectations of actors. International regimes and institutions do not enforce the rules in a hierarchical manner, but they do change patterns of transaction costs and provide information to participants, so that uncertainty is reduced. Institutions may include organizations, bureaucratic agencies, treaties and agreements, and informal practices that states accept as binding (Axelrod & Keohane 1985: 250, Lamy 2005: 214). Most importantly for the discussion on cooperation and negotiation related to transboundary water agreements, neoliberal institutionalists contend that it is the prospect of cheating, which provokes curtailment of cooperation. However, cheating may be mitigated and cooperation facilitated, depending on the institutional arrangements among the states (Axelrod & Keohane 1985: 250, Lamy 2005: 213, Zacher & Matthew 1995: 118).

In an article reviewing the international conflict level from 1948-2006, Gleditsch (2008) shows that there was a peak of armed violence in the middle of the 20th century, but that war and armed conflict are a phenomena that since has been on the decline. Since the 1990s the international conflict level has stabilized on an all-time low level. Gleditsch explains this by the change in international institutions and norms in recent history.

> We have lived through a particularly lethal combination of the old perception of war as a useful instrument of policy with the modern technological capacity to wage war effectively. Our technological skills have continued to improve, so we could kill each other many times over if we applied the full range of human ingenuity to that task. A single direct nuclear exchange between the two superpowers would have changed the picture dramatically and created a more recent and higher peak of severity. If we do not kill each other at such a rate, it is because our institutions and attitudes have changed (Gleditsch 2008: 698).

Within the neoliberal camp, arguing that cooperation is the norm and conflict is the anomaly, we find the work of Shlomi Dinar (2008). Dinar has developed a comprehensive theory related to international river treaty negotiation. He claims that the neo-realist approaches to hydro-politics over shared water resources are incorrect, and argues that the geography of a river as well as the relative power of the neighboring states provide the background for understanding the prerequisites for cooperation, but he also claims that there are a number of other factors that influence the potential for cooperation. Most importantly he argues that the way that the shared water resources are dealt with depends not on hegemony, but on voluntary contracting among states (2008: 16).

According to Dinar, the geography and power-related considerations need to be linked to reciprocity, issue-linkage and side-payments. Dinar calls this "the building blocks of strategic interaction" (2008: 16). Side-payments repaying for the benefits that the upstream state creates in favour of the downstream state can provide an important incentive to cooperation, as it contributes to balancing the geographically asymmetric relationship between an upstream and a downstream state (2008: 26).

Strategic interaction includes elements of reciprocity and issue-linkage. Countries that share more than one river may be upstream on some rivers yet downstream on others. In this case, countries may not wish to exploit their strategic location on the first river to the detriment of the other state, setting precedent for the other state to act in the same manner on the second river where it is more strategically located (Dinar 2008: 22).

Furthermore, he lists a number of other factors that have a facilitating effect on cooperation over water scarcity issues. Transnational organizations and nongovernmental organizations play an instrumental role in facilitating cooperation and international agreements because they help persuade the parties that cooperation is a win-win situation. They build consensus, define the negotiating agenda, and create a problem-solving atmosphere. And they may provide financial assistance that might make an agreement more attractive to by changing the payoffs for cooperation. “Epistemic communities” are knowledge based networks that are often consulted on technical issues that require expertise that regular politicians and diplomats do not have. Epistemic communities are able to exert influence on policy innovation, policy diffusion, policy selection, and policy persistence. By doing so, they play a role in creating norms, social realities, and perceptions among the policy makers. In turn nation states will exert power on behalf of the values and practices promoted by the epistemic community and will thus help in their international institutionalization (Dinar 2008: 29). Epistemic communities however, often depend on many exogenous variables, which challenge their roles in negotiations and constructing knowledge. For example, the role of ideas often becomes more salient and powerful at times of crisis. Epistemic communities become more relevant when policy makers seek advice from expert communities. Therefore it might actually be the crisis situation driving the cooperative outcome of negotiations, and not the epistemic communities (Dinar 2008: 29). Even when epistemic communities, or third-party organizations, take an active role in negotiations; it is their ability to provide side-payments or other incentives that makes otherwise recalcitrant parties want to cooperate (Dinar 2008: 30).

As empirical evidence seems to suggest that states cooperate over shared water resources more often than engaging in conflict, researchers have in recent years taken interest in finding the factors which seem to induce such cooperation through aggregated analysis.

Song and Whittington's (2004) main findings are that international rivers with riparians that have countervailing economic and political power are far more likely to have negotiated treaties than other river types. Riparian states on international rivers sharing a "western civilization" were much more likely to have concluded treaties than riparian states on rivers in other civilizations. Rivers that cross "civilization boundaries" appear no less likely to have treaties than international rivers that run entirely through riparian states that share a single civilization. Espey and Towfique also published a quantitative analysis of bilateral water treaties in 2004. They attempted to determine the factors that have influenced the formation of bilateral international water treaties over the last 60 years (Espey and Towfique 2004: 1). They tested a set of hydrological, geographical, socioeconomic, political and cultural factors, and found that the larger a water basin is as a percent of a country's size, the more likely the country is to form a treaty regarding its management. Hansen, Mitchell and Nemeth (2008) found that international institutions tend to promote the effective mediation and settlement of territorial, maritime and river claims. While Brochmann & Hensel (2009) argue that the value of a given river to the countries sharing it is an important predictor of states negotiating behavior, and that water availability is the key to interaction over rivers. Low access will increase competition over the limited resource and disagreements are likely to occur – but this is the situation where states are most likely to enter into negotiations to solve the disagreements (Brochmann & Hensel 2009: 414). Tir & Stinnett (2011: 20) conclude their analysis by stating that treaties that address especially difficult river use issues, such as water quantity and navigation, are most likely to contain provisions for institutional governance.

All these aggregated analyses point in the same direction in their conclusion; when the river basin is crucial to the involved parties, e.g. because of resource scarcity or pollution, the parties themselves as well as other institutions that might be involved tend to put more efforts into solving disagreements, this results in highly institutionalized solutions such as high persistence treaties.

2.5.3 Technology

Some writers within the water non-conflict approach have taken the position of strongly questioning the base argument used to predict conflict over environmental issues or scarce resources. These writers claim that discussing the consequences of water scarcity is irrelevant because it ignores human inventiveness and technological change (Gleditsch & Diehl 2001: 253). Cornucopian theory, as formulated by Simon (1981), Deudney (1991) and Lomborg (2001) acknowledges that greater consumption is due to an increase in population, which heightens scarcity and induces price increases in the short run. Higher prices then create an opportunity, which leads inventors and businesses to seek new ways to satisfy the shortages. A few inventors and businesses eventually succeed, and finally society ends up better off than if the original shortage problems had never arisen. As population grows, the stock of useful knowledge grows as well. At the baseline of the Cornucopian approach lies both an optimistic view of the environmental situation, as well as of human nature itself.

The Cornucopians also take their assumptions one step further arguing that modern industry produces highly processed goods, which require intensive use of capital, technology and energy rather than raw materials. Another factor they put forward as an argument is that one should not overlook the role of international trade, as most scarcities are local rather than universal (Gleditsch & Diehl 2001: 253).

2.6 Hypotheses

To summarize the theoretical debate on resource scarcity and the potential for war over water one can say that the writers within the Environmental Security tradition have, although based on different arguments, been predicting war over water to break out for several decades. The Political Ecologists claimed that disruptions in the world's ecosystems would eventually cause conflicts to erupt because the collapse of ecosystems eventually leads to the collapse of societies. The Neo-Malthusians have generally focused more on intrastate conflict caused by competition among groups in society to gain control over scarce resources. An assessment of the situation of water scarcity in Jordan, Israel and oPt shows that according to the pessimistic predictions of Homer-Dixon, these countries should be at the brink of war. The fact that no

war over water has actually occurred has made neo-liberal approaches gain strength in explaining the outcomes of resource scarcity. The Neo-Liberals' explanations for the absence of war over water focus on three factors: Trade, Treaty and Technology. Recent years' aggregated analyses have shown that cooperation is a more probable result of water scarcity than war, and that it is generally when the water resources have high value to the involved parties that treaties with efficient solutions for allocation are negotiated. Still, an explanation for why no war over water has yet occurred in the Middle East is a question which has not been properly addressed. Two main hypotheses[12] can be deduced as possible explanations for this absence of war:

H1: Water is not a sufficiently important issue to go to war over in a region where high politics dominate.

H2: Water is a resource which is fundamentally too important for people's survival to go to war over.

The first hypothetical explanation, H1, is based on the neo-realist assumption that water is a "low politics" issue, an issue which is not salient enough to be considered critical for state survival. The second hypothetical explanation, H2, is based on the neo-liberal assumption that states seek cooperation when it is in their mutual interest to do so. Realizing that water is a critical resource and that cooperation is the best way of solving issues related to water scarcity, states will seek to establish common water regimes.

Chapter 4 "Analysis" addresses these hypotheses. Based on interview data collected in December 2010, and different written sources, such as evaluation reports (by third parties) and scientific articles, I will attempt to establish which of the hypothetical explanations is more in line with the empirical evidence.

[12] I wish to emphasize that even though I use hypotheses to guide my analysis of the empirical data, this does not imply that the study is meant to be a straight-forward confirmatory/disconfirmatory one. The goal is to establish insight into the causal mechanisms that can explain the absence of war (see also Chapter 3 Methodological Approach for a discussion of these issues). As emphasized in section 1.3 the study is also not meant to be an exhaustive evaluation of all possible explanations for the absence of war over water, focus is on central theories within the field of International Relations.

3. Methodological Approach

> "Even more important than choosing a good method is being careful to record and report whatever method was used and all the information necessary for someone else to apply it" (King et al. 1994: 23).

Multilateral cooperation on water is a complex social phenomenon both in theory and in practice. According to Yin (2009: 4) the desire to understand such complex phenomena has created a need for case studies. The virtue of the case study, as practitioners of the method point out, is the depth of analysis that is offers, along with insight into causal mechanisms (Gerring 2007: 49). The base argument for the choice of case study as method in this research paper follows the same logic; notably that a case study will provide insight into the factors that the key actors themselves consider important for explaining the absence of war over water in the Middle East.

In the following I shortly present the main affinities and inconveniences linked to the qualitative case study as a method relevant to my research question. I also present a discussion on why the case under study can be argued to represent the Middle East as a region, before I proceed to discussing the pros and cons of method triangulation with interviews and content analysis for this research project. I conclude the chapter with a note on the validity and the reliability of the study.

3.1 The Case Study as Method: A Note on Its Affinities and Inconveniences

A key methodological lesson is that "the research question determines the method" (Gerring 2007: 71). In this case, the research question "How can we explain the absence of war over water in the Middle East?" is a "how" question. A "how" or "why" research question implies that one is dealing with an explanatory research project, which is likely to lead to the use of case studies as the preferred research method (Yin 2009: 9). This is because such questions

deal with operational links needing to be traced over time, rather than mere frequencies or incidence. If you want to know "how" or "why" something happens, you will have to draw upon a wider array of documentary information, in addition to conducting interviews (Yin 2009: 19). In-depth studies are also known to have contributed to some of the most important theoretical insights in the social sciences; the theory of the iron law of Oligarchy[13] being the most famous example of this (Gerring 2007: 109).

Qualitative research is often seen as a preliminary, exploratory effort to quantitative research since quantitative research is by many viewed as the only type that yields rigorously verified findings and hypotheses (Gerring 2007: 40-41). But qualitative research should also be scrutinized for its usefulness in the discovery of substantive theory – the formulation of concepts and their interrelation into a set of hypotheses for a given substantive area. Qualitative research is often the most adequate and efficient method for obtaining the type of information required and for contending with the difficulties of an empirical research situation (Glaser and Strauss 1971: 288).

The choice of methodological design has consequences for the validity of the inferences that one makes from analysis (Lund 2002: 97). The inferences made in case studies can generally not be said to have statistical validity or validity beyond the case in focus. Adherents of statistical analysis have expressed doubts about the case study method's usefulness for general knowledge development. Case study researchers however, have countered this critique by explaining that "[a] case study may be understood as the intensive study of a single case where the purpose of that study – at least in part – is to shed light on a larger class of cases (a population)" (Gerring 2007: 20). The key to doing a fruitful case study is therefore to choose *a case* or *a few cases* that somehow can be argued to represent a broader scope of cases. A discussion of the case selection in this research project follows in the next sections.

[13] "The Iron Law of Oligarchy" is a theory developed by Roberto Michels stating that all forms of organizations will eventually and inevitably develop into oligarchies (Michels 1911; Scaff 1981).

3.2 Case Selection and Representativeness

If the research question is posed in such a way that it covers a more comprehensive set of units than the actual empirical data does, it is important to select units that can be said to represent a broader number of cases (Lund 2002: 91-92). In a qualitative case study, reporting the precise rules by which we choose the small number of cases for analysis is critical (King et al. 1994: 23). Several reasons why Jordan, Israel and the PA together constitute a good basis for saying something general about the absence of war over water in the Middle East can be pointed out[14].

The Middle East is considered the world's most water-scarce region and in many places demand for water outstrips supply[15]. Climate models are now prognosticating an even hotter, drier and less predictable climate in the region. Higher temperatures and less rainfall will reduce the flow of rivers and streams, slow the rate at which aquifers recharge, progressively raise sea levels and make the entire region more arid (Brown & Crawford 2009: 2). Every state in the Jordan River basin is well below the global average of water availability (Engelman & LeRoy 1993; Brown & Crawford 2009: 12), but Jordan and Palestine are the most stressed riparians on the Jordan River. Most of the water (both rivers and aquifers) shared by the three entities Jordan, Israel and the occupied Palestinian territories is transboundary (Beaumont 2000: 19). Some traits that are common for all three countries, which indicate why they are interesting study objects, can be described. The populations in the three countries have limited access to fresh water resources. In Israel they have 265 m³, in the oPt they have 90 m³ and in Jordan they have 169 m³ per person per year (Raphaeli 2007). This means that all three fall below the UN threshold of 1000 cubic metres per person per year. As shown by the maps in chapter 1, all three countries share freshwater resources either through the Jordan River Basin (Israel and Jordan), or through freshwater aquifers (Israel-oPt). In addition to being the world's most water scarce region, it is also the world's "youngest" region. All three countries are experiencing rapid demographic changes and

[14] Although some might argue that Israel-Syria or Israel-Lebanon are just as interesting or just as representative for the region as Israel-Jordan or Israel-PA, I have chosen to not include these in the analysis as Syria and Lebanon currently are not per definition suffering from water scarcity. Syria currently has access to 1,541 m³ per person per year, and Lebanon 1,220 m³, both are thus above the UN threshold of 1000 m³ per person per year (Boko et al. 2007)

[15] The Middle East and North Africa (the MENA region) is considered the world's most water scarce region (Boko et al. 2007).

population growth, which is expected to inflict on the patterns on water consumption in the near future. The young population is both a cause and a consequence of this rapid population growth (Brown & Crawford 2009: 10). The population of the oPt is expected to increase by 46% during the period 2008-2050, in Jordan increase for this period is expected to be 37% and for Israel 28% (UNFPA 2008). It is also expected that climate change will affect freshwater access substantially in all three countries, mainly through longer and more frequent drought periods (Brown & Crawford 2009: 11). A summary of these common traits with regards to water resources follows in box 3.2.1.

Box 3.2.1 Freshwater access in Jordan, Israel and the oPt

- All three countries suffer from water scarcity.
- The water resources in all three countries have a transboundary characteristic.
- All three countries are experiencing rapid demographic changes, and changes in water consumption patterns.
- Climate change is expected to impact negatively on the access to freshwater resources.

A fruitful approach is to study these three countries as cases of bilateral relations. I have excluded the case of Jordan-PA from the analysis because this pair shares few freshwater resources (only the lower parts of the Jordan River), and does not have a history of conflictual water relations. We are thus facing three countries which will be treated as two cases of bilateral relations. In the following sections I summarize the main reasons why the two cases of bilateral relations (Israel-PA and Israel-Jordan) can be said to be representative for the region in general (ref. to section 2.3 where some of these arguments are also mentioned).

3.2.1 Israel and the PA

Israel's political relations with its neighbors are generally either tense (i.e. with Turkey) or non-existent (i.e. with Syria, Lebanon, Saudi Arabia, Iraq and Iran). But the fact that Israel is de facto occupying the Palestinian territories makes the PA the authority that has the highest potential of all of Israel's neighbors of engaging in high tension conflict or war with Israeli

Authorities. Not because the PA are interested in war with Israel, but because Israel practically has no incentive to avoid retaliation when they feel that their interests are being "stepped on" either by the PA or the Palestinian population. The conflict between Israel and the Palestinians is also one of the longest lasting conflicts in modern history, including high tension periods like the first and the second intifada. This indicates that relations between Israeli Authorities and the PA can be considered as a case of bilateral relations where the possibility of finding peaceful solutions to common problems is very low. As mentioned in chapter 2 (section 2.3) the case of Israel-PA also fits smoothly with Homer-Dixon's conditions for conflict[16]. Box 3.2.1.1 summarizes the bilateral relations of interest between Israel and the PA.

Box 3.2.1.1 Bilateral relations Israel-PA

- The conflict between Israel and the Palestinians is one of the longest lasting conflicts in modern history.
- The tense relationship between the two authorities has on several occasions developed into a warlike state (i.e. during the two intifadas).
- Israel and the PA rely on common groundwater aquifers for freshwater supply.
- The case of Israel and the PA fits perfectly with Homer-Dixon's conditions for conflict.

Israel is also important to include in the analysis because of its modern economy and western living standards. The country exhibits a level and pattern of water demand that is currently atypical to the region. There is hardly a country in the region, however, that is not experiencing alarming growth in its demand for water, and few are instituting significant construction programs. Consequently one can assume that technological solutions for water problems established by Israel will set the example to follow for other Middle Eastern countries (Lonergan & Brooks 1994: 7).

[16] Ref. to section 2.2.2 where these conditions are outlined.

A great number of disputes[17] over water in the Middle East include Israel, on one hand because of the country's geographical location bordering several other countries in the region as well as transboundary aquifers and rivers, and on the other hand because of the country's dominant military position in the region. Understanding Israel's behaviour with regards to water related issues seems to be a key factor for understanding water cooperation in the region.

The Palestinian Territories are considered occupied territory (under Israeli occupation), and one might argue that it is not appropriate to label relations between the two entities "bilateral". The fact of the matter however remains that the right of the Palestinian people to self-determination, national independence, and sovereignty was recognized by the United Nations General Assembly Resolution 3236 in 1974, and since the establishment of the Palestinian National Authority following the Oslo Accords in 1994, negotiations between the two parties (Israel and the PA) have been functioning bilaterally as negotiations between two governments. Represented by the Palestine Liberation Organization, Palestine has become signatory to a number of regional Middle East Agreements, including the Regional Convention for the Conservation of the Red Sea and Gulf of Aden Environment (Barrett 2003: 154). The PA was established through the Palestinian-Israeli Declaration of Principles on Interim Self Government (DoP) signed between the PLO and the Government of Israel on 13th September, 2003. Although the PA is essentially an interim administrative organization that nominally governs parts of the West Bank and Gaza, it has the institutional character of a state, with a legislative arm (The Palestinian Legislative Council, or the PLC) and an executive (the Cabinet). There is also a nominally independent judiciary. The PA also has bilateral relations[18] with most countries in the world, hence having the structure and the functions an independent state.

[17] Out of the 169 negative (score between -1 and -6) water related incidents registered for the Jordan River Basin between 1951 and 1998, Israel was involved in 150 (Transboundary Freshwater Dispute Database 2011).
[18] 117 countries have recognized the Palestinian people's right to self determination (list provided on request from the Palestinian Delegation to Norway).

3.2.2 Israel and Jordan

The pair of Jordan-Israel also meets several of Homer-Dixon's "conditions for conflict". The pair however deviates on the condition that Homer-Dixon lists as "maybe the most important factor" – notably that the downstream country should believe that it is militarily stronger than the upstream country. Jordanian Authorities are well aware that they do not have the military capacities of Israel. Despite several years of tension between the two countries with regards to issues related to the Jordan River, Jordan and Israel with the diplomatic assistance of the US where able to reach a peace agreement in 1994, where several important water allocation issues were addressed. Jordan is the only other country in the Middle East apart from Egypt that has signed a peace agreement with Israel[19]. Having interacted in friendly terms for almost 20[20] years makes the pair of Jordan-Israel a case where the potential for conflict is comparably low to the case of Israel-PA. Box 3.2.2.1 summarizes the bilateral relations of interest between Israel and Jordan.

Box 3.2.2.1 Bilateral relations Israel-Jordan

- Israel and Jordan have had a history of conflictual political relations, and water issues were a central part of the conflict.
- The two countries however signed a peace agreement in 1994, and have since this had stable political relations.
- Israel and Jordan are both dependent on the waters in the Jordan River for freshwater supply.

3.2.3 The Case in Study Summarized

With the inclusion of the two pairs of bilateral relations, Israel-PA and Israel-Jordan, we have a case study that includes two cases of bilateral relations situated on both ends of a "potential for conflict scale". With Israel-PA the potential for conflict over basically any issue is high, while with Israel-Jordan the potential for conflict over any issue should be considered relatively low due to the peace treaty. The two cases selected for the study can thus be said to

[19] The validity of the peace agreement between Israel and Egypt is currently subject to discussion due to the recent events in Egypt (popular revolt followed by Mubarak's resignation in February 2011).
[20] From 1994-2007 the Militarized Interstate Dispute Data has registered only 1 conflict between Jordan and Israel (No. 4274 in 1998) which is listed with 0 fatalities (Correlates of War 2007).

represent "typical" cases or "least likely/most likely" cases for cooperation and conflict in the Middle East. Arguing that the cases represent a "most likely" case of conflict (Israel-PA) and a "least likely" case of conflict (Israel-Jordan) does not imply the use of any specific method such as a *crucial case test*[21] to confirm or disconfirm theory. This argument is merely presented to show that the selection of cases ensures the broadest possible reach of the causal propositions resulting from the study (Gerring 2007: 49).

Israel-Jordan represents a case of an already established treaty, while between Israel and the PA there still has been no signing of a water treaty. This means that we have variation on the independent variable characterizing the political relationship between the parties. Although some writers[22] profess that variation on the dependent variable is the only viable method for case selection, this is not an option when one is attempting to explain the *absence* of a certain outcome on this dependent variable.

Lonergan (2000: 45) argues that when analyzing the relationship between water scarcity and conflict in the Middle East, it is important to keep in mind that it cannot be reduced to a simple cause and effect relationship, since it is part of an intrinsic system of linkages. In Chapter 4, I take a deeper look into this system of linkages and attempt to find the mechanisms which can explain the absence of war over water, keeping the different theoretical approaches on the field in mind as a means of classifying findings.

3.3 Testing the Hypotheses by Method Triangulation

A hypothesis is a declarative sentence stating expected relationships between the phenomena to which our concepts refer (Yin 2009: 96). In order to address the research question and the hypotheses in focus for this study, I have used different methods of data collection. Triangulation in data collection is one of the advantages with the case study approach, and is often a necessary component of focused studies (Yin 2009:97). Method triangulation

[21] See Gerring 2007:115 for an explanation of the crucial case test as method for qualitative analysis.
[22] See for example Geddes 2003: 94.

generally strengthens the validity of inferences because multiple sources of empirical evidence are consulted; each conclusion made is corroborated by multiple sources of evidence (Lund 2002: 86). In this research project I have attempted to achieve a triangulation by comparing the views expressed by high officials of the Israeli, Palestinian and Jordanian water authorities, with documents such as the Nordic Consulting Group's "Evaluation of CESAR's Activities in the Middle East Funded by Norway" (2004), and other scientific documents and evaluation reports (written by third parties) on the water situation in the three countries.

3.3.1 Qualitative Interviews

In order to address the hypotheses developed in Chapter 2 I conducted interviews with high officials (key informants) from the Jordanian, Israeli and Palestinian Governments. In December 2010 I carried out interviews with Professor Uri Shani, Head of the Israeli Water Authority, Doctor Shaddad al-Attili, Head of the PA's Water Authority, and Mrs. Maysoon al-Zoubi, Deputy Minister at the Jordanian Ministry of Water and Irrigation. According to Andersen (2006: 291) the active use of key informants should be seen in relation to the general research strategy. In my case I believe that the key informants' opinions on the situation in the three countries are of high relevance not only because they are "experts on the field" but also because they have the authority to take or at least incite action on the issues in question.

Interviewing is a special form of social interaction. An interview will often be characterized by tension and contradictions related to roles and role expectations. The interview situation and the relation between researcher and informant have an impact on the type of data that can be established (Yin 2009: 90). In this case the informants are not the units in the analysis; they are merely carrying information about the case/situation which I am aiming to establish knowledge about. The data collected through interviews is the key actors' explanations of the interaction between Israeli, Palestinian and Jordanian Authorities concerning water issues, the absence of a water war in the region, as well as explanations of the ongoing cooperation between the three countries.

The semi-structured interview technique I have used "increases the comprehensiveness of the data and makes data collection somewhat systematic for each respondent, logical gaps in data can be anticipated and closed" (Mikkelsen 2005:171; Aberbach & Rockman 2002: 674). Yin (2009: 91) reminds us that when conducting such interviews it is important to understand the informants with regards to their own references. When conducting elite interviews, there are also a number of factors one should be aware of. These can mainly be summarized into saying that political elites are knowledgeable, often good speakers and that they might have their own agenda for the interview (Berry 2002: 679). As stated by Andersen (2006: 288) "believing that elite informants immediately will provide us with the truth is at best a naïve assumption".

Prior knowledge about the field of research however, opens up for method triangulation, which is considered to be an adequate way of counteracting the effects of "informant-bias". The data collected through interviews is controlled against other sources of information (i.e. documents), which makes a sharper focus and a more critical evaluation of the interview data possible (Andersen 2006: 286). At the same time, the idea of using focused interviews as a method builds upon the assumption that it *is* possible to understand the social reality by listening to and interpreting what is said. From the point of view of the researcher, this means that one has the ability to interpret based on an analytical sensibility, and to see the theoretical in the empirical (Andersen 2006: 295).

3.3.2 Content Analysis

Krippendorf (1980:21) defines content analysis as "a research technique for making replicable and valid inferences from data to their context". In any content analysis it must be clear which data are analyzed, and from which population they are drawn, and context relative to which data are analyzed must be made explicit (Krippendorf 1980: 23).

In this research project, the data object to content analysis is a collection of different types of textual documents; some can be considered "primary" sources and others "secondary". [23] The interview data, meeting minutes and reports from EXACT meetings can be categorized as primary documents, while the Nordic Consulting Group's evaluation report is a secondary source of information. The documents studied in this research project are mainly used with the goal of either confirming or disconfirming assumptions made by the interview objects, as well as functioning as a supplement where the respondents' objectives seem to be deficient. The documents also contribute with a more detailed contextual description of the case/cases under study.

3.4 On the Validity and Reliability of the Study

An essential part of the data collected for analysis was the interviews conducted with Israeli, Palestinian and Jordanian High Officials in December 2010. This means that important parts of the analysis are based on data constructed in an active interaction between two parties. This makes it especially relevant to address the issue of validity and reliability. Validity and reliability are essential issues when carrying out research projects. King et al. state that as researchers we should always "[m]aximize the validity of our measurements" and "[e]nsure that data-collection methods are reliable" (1994: 25).

Validity refers to measuring what we think we are measuring. It is easiest to maximize validity by adhering to the data and not allowing unobserved or immeasurable concepts get in the way. According to Hellevik (1991: 103) the question of validity comes down to the extent to which the data material can say something relevant about the research question. Seeking multiple sources of testimony is an important strategy for ensuring the validity of a case study, and data triangulation is an important strategy in this respect. If different data sources lead to the same conclusion, the validity of the conclusions made is strengthened (Yin 2009: 97). For my research project the question of validity is strongly related to the formulation of questions in the interview guide, as well as the interpretation of the respondent's answers to

[23] Primary and Secondary Sources : "primary sources constitute the basic, raw, imperfect evidence (...) while secondary sources are books and articles of other historians" (Marwik 1970 as cited in McCulloch 2004: 30).

these questions. In the analysis claims are generally based on arguments from multiple sources. However, in those few cases where a statement made by one of the interview objects is difficult to interpret I make sure to discuss the possible interpretations. During the interviews I also attempted to avoid such uncertainties by posing follow-up questions whenever I felt that the interview object was replying in an unclear manner or to the side of the question. Taking an active role during interviews provides analytical control and ensures the validity of interview data (Andersen 2006: 285). As mentioned in section 3.2, the case study's strong point is internal validity (insight into causal mechanisms reduces the chance of making spurious inferences) rather than external validity (also known as statistical validity – that inferences can be said to be representative for a wider number of cases). By providing an interview guide with questions relevant to the research question, by probing and taking an active role during the interview, in addition to using method triangulation to ensure multiple sources of evidence I argue that the internal validity of this study is high. By providing thorough arguments for why the selected cases can be said to be representative for the region as a whole, I also argue that the external validity of the study is as high as can be for a case study.

Reliability means that applying the same procedure in the same way will always produce the same measure. When a reliable procedure is applied at different times and nothing has happened in the meantime to change the "true" state of the object we are measuring, the same results will be observed (King et al. 1994: 25). "All data and analyses should, insofar as possible, be replicable". (King et. al 1994: 26). Replicability applies not only to data, but to the entire reasoning process used in producing conclusions. On the basis of our research report, a new researcher should be able to duplicate our data and trace the logic by which we reached our conclusions. By reporting the study in sufficient detail, we ensure the possibility of evaluating the procedures followed and methods used (King et al. 1994: 26). In order to ensure the reliability of this study, I recorded all interviews with dictaphone and transcribed the content, which makes it possible to verify them. The documents used for content analysis are available to the public either online or in public libraries.

4. Analysis

In chapter 2 “Theoretical Framework” I argued that there is a general agreement among researchers that water has never been the direct cause of war anywhere in the world, not even in the Middle East where the probability of such an outcome has been considered high. Two hypothetical explanations for this absence of war over water were presented in section 2.6:

H1: Water is not a sufficiently important issue to go to war over in a region where high politics dominate.

H2: Water is a resource which is fundamentally too important for people’s survival to go to war over.

The first hypothesis is based on a realist argument that water is a “soft issue” and will never gain high enough priority on the political agenda to cause state leaders to go to war. The second hypothesis on the other hand, is based on the liberal assumption that states will cooperate to solve problems when this is in their common interest.

By analyzing the political relations between the three Core Parties (Jordan, Israel and the PA) with regards to water issues, I will attempt to asses which of the hypothetical explanations finds the most support in the empirical material. Since the Madrid Conference was held in 1991 to initiate “The Middle East Peace Process”, multilateral negotiations and talks on water issues have been dealt with under the umbrella of “The Multilateral Working Group on Water” (MWGW). The Working Group consists of representatives from the three Core Parties with the US as gavel holder, accompanied by representatives from donor parties to the cooperation such as EU, France and the Netherlands. The empirical evidence subject to analysis in this research project mainly stems from the discussions, talks and cooperation resulting from the meetings of the MWGW, as well as evaluation reports by independent institutions on the accomplishments of the MWGW.

In the following sections I provide a short presentation of the MWGW, as well as the Core Parties' respective national water management institutions. I also present the representatives with which I have conducted interviews and their relation to the national water management institutions. In section 4.2 I present the evidence which indicates support of H1, while I in section 4.3 present the parts of the empirical evidence supporting H2. In section 4.4 I make the final inference as to which hypothesis finds the most support.

4.1 The Multilateral Working Group on Water

The Middle East Peace Process and its bilateral track began with the Madrid Conference of 1991. The bilateral track was designed to concentrate on political issues that Israelis and Palestinians had inherited from the past, such as territorial control and sovereignty, border demarcations, security arrangements and the political rights of the Palestinians. A multilateral track was also established to focus on issues that could shape the future. The framework for the multilateral track was established in Moscow in 1992, and five multilateral working groups were set up. These were intended to examine a range of technically oriented issues that extend across national boundaries, the resolution of which is essential for long-term regional development, stability and security in the region. It was recognized that management and sharing of the scarce water resources is one of the main issues that needs to be resolved in order to obtain a sustainable and lasting solution to the Middle East conflict. The Multilateral Working Group on Water was thus one of the five groups[24] established to supplement and reinforce the bilateral track (NCG 2004: 49). The thinking behind the multilateral track was outlined by the U.S. Secretary of State James Baker in his remarks to the January 1992 opening meeting of the multilaterals in Moscow:

> It is for this reason that we have come together – to address those issues that are common to the region and that do not necessarily respect national boundaries or geographic boundaries. These issues can be best addressed by the concerted efforts of the regional parties together with the support of the international community and the resources and expertise it can provide (Baker as quoted in Peters 1999: 90).

[24] The other four Working Groups established at the same time were: the Working Group on the Environment, the Working Group on Regional Economic Development, the Working Group on Refugees, and the Working Group on Arms Control and Regional Security.

The MWGW established the following four broad agenda items to address some of the critical water issues:

- Enhancement of water data availability
- Water management practices, including conservation
- Enhancement of water supply
- Concepts of regional water management and cooperation

In the aim of addressing the "enhancement of water data availability" the Multilateral Working Group on Water Resources endorsed the Water Data Banks Project in November 1994. The Water Data Banks Project consists of a series of specific actions to be taken by the Israelis, Jordanians, and Palestinians that are designed to foster the adoption of common, standardized data collection and storage techniques among the Parties, to improve the quality of the water resources data collected in the region, and to improve communication among the scientific community in the region. The project is managed by an Executive Action Team (EXACT), comprised of water experts from Israeli, Jordanian, and Palestinian water-management agencies. Technical and financial support to EXACT is contributed by donor parties such as the European Union, France, The Netherlands, Norway and the United States. The Committee meets twice every year to plan, coordinate, and direct project implementation. In the following section I give a non-exhaustive presentation of some of the projects endorsed by the Working Group and the managing EXACT Committee.

The approach of the multilaterals is grounded in the functionalist thesis of international relations which holds that engaging states in an ever-widening web of economic, technical and welfare interdependencies will force them to set aside their political and/or ideological rivalries and create a new perception of shared needs. It was hoped that developments on the multilateral level would serve as confidence-building measures that would then facilitate progress at the bilateral level – that is, that functional cooperation would eventually spill over into regional peace (Peters 1999: 90). Cooperation, it was hoped, would foster a fundamental change in attitude and lead to convergence of expectations and the institutionalization of behavior.

In box 4.1.1 follows an assessment of MWGW projects relevant to this research paper.

Box 4.1.1 Assessment of MWGW projects

Atlas I, Water Resource Data for Decision Making in the Middle East

The Water Atlas was one of the first MWGW projects and was seen as an opportunity to promote dialogue on management of shared water resources. A rationale for commissioning the Water Atlas was that the stakeholders held different information about their joint water resources with significant variation in quality between the parties. The stakeholders, moreover, recognized that the Palestinian Authority in contrast to the Israelis and the Jordanians, lacked detailed information about their water resources. The Water Atlas was intended to provide an unbiased source of information concerning the shared water resources of the three parties.

The Regional Comparative Studies

The Regional Comparative Studies on Water Laws, Water Institutions and Water Economics were produced in two volumes in two parallel processes; Volume I covering Israel, the PA and Jordan, and Volume II covering Lebanon and Syria. The separation of the processes was due to the fact that, politically, Syria and Lebanon did not want to be a part of a process involving Israel. Running the process in parallel was done as an attempt to bring the parties closer to a joint process and dialogue and the future. The rationale for undertaking the comparative regional study was "to allow the parties to have proper understanding about the other parties' water resources and management which focused on the water laws, institutions and water supply and economics".

The Declaration of Principles

The Declaration of Principles for Cooperation on Water-related Matters and New and Additional Water Resources (DOP) was signed by the three parties in 1996. According to representatives of the three parties, the DOP was a result of efforts by the political leadership of Norway that through CESAR[1] strongly advocated the need to show tangible outputs from the MWGW process. As such they promoted the elaboration and signing of the DOP (just as other donors to the MWGW process advocated formal agreements/and or joint statements as outcome of projects they funded).

The Waternet

As part of the DOP, the parties agreed to cooperate on the development of new and additional water resources and other matters related to cooperation on water resources, including the "collection, filing, processing, transmission and exchange of water data and related information". Subsequently, in 1996 the MWGW agreed to implement the Waternet Project. The Waternet Project was designed to enhance Middle East cooperation on water related issues through finding a technical solution for sharing information related to politically sensitive issues. The sharing of water data and related information was seen as essential for effective cooperation to take place on internationally shared resources. Asymmetry in information among the parties has been considered the main obstacle to water cooperation since the signing of the Oslo Accord.

The Middle East Desalination Research Centre

The Middle East Desalination Research Centre (MEDRC) was proposed by the government of Oman in 1994, endorsed by the MWGW and inaugurated in Muscat in December 1996. The United states, Oman, Japan, Israel, the European Union, and Korea contributed financial resources to fund its establishment and initial operation. The Centre's mission is to conduct, facilitate, promote, coordinate, and support basic an applied research in water desalination and supporting fields.

(Source: EXACT 2011; NCG 2004)

Projects implemented by the MWGW on a national basis are not discussed here as they do not have any specific relevance to the research question. In the three following sections I give a brief presentation of the three Parties water managing institutions. This is to provide insight into how water resources are managed, as well as giving an indication of the interview objects' roles in respective water management of the three countries.

4.1.2 Israeli Regulation of Water Resources and the Director of the Water Authority

The Minister of National Infrastructures is the Cabinet member responsible to the Parliament (the Knesset) for the management of water resources in Israel. Some aspects of the management, protection and allocation of water resources fall into the spheres of other ministries, and require their consent. This primarily concerns the Ministries of Agriculture, Environmental Protection, Health, Finance and the Interior. Following the 2006 amendment to the Israeli Water Law, many of these Ministries responsibilities with respect to the water sector were transferred to "the Council of the Governmental Authority of Water and Sewerage" (the Israeli Water Authority in short). The Council is an inter-agency body, headed by the Director of the Authority, and composed of senior representatives of the Ministries of Finance, National Infrastructures, Environmental Protection and Interior. The Director of the Water Authority is a cabinet appointed civil servant reporting to the Minister of National Infrastructures and to the Knesset (MNI, Israel 2011).

Professor Uri Shani was appointed director of the Israeli Water Authority 6 December 2006, and is in charge of the Israeli water sector and the water related negotiations. As part of the data collection for this thesis I interviewed Prof. Shani in December 2010, succeeded by a follow-up telephone interview in May 2011.

4.1.3 Palestinian Regulation of Water Resources and the Minister of the PWA

Upon the signing of the Declaration of Principles (DOP) and the 1995 Interim Agreement, the Palestinian Authority (PA) inherited an extremely weak water sector characterized by serious institutional fragmentation. In 1995, the Palestinian Water Authority (PWA) was established by a presidential decree. One year later, its functions, objectives and responsibilities were defined through a by-law, giving the PWA the mandate to manage water resources and execute the water policy. It was also made responsible for establishing cooperation and coordination between several stakeholders. Inadequate conditions in terms of water access and quality are however still common and the legal framework of the water managing institutions is in many cases unclear.

General water sector policies are set by the Palestinian cabinet of ministries and the National Water Council. According to the Water Law No. 3, the NWC has the task to ratify policies, plans, and programs concerning water resources in Palestine. The council has the authority to suspend or dismantle the services of the board of directors of the regional water and wastewater services providers. The members of the council include the main Palestinian ministries and other relevant stakeholders like the PWA and the PA.

The PWA acts as regulatory authority, responsible for the legislation, monitoring and human resources development in the sector. The PWA is also in charge of water resources and wastewater management. It has the mandate to carry out regular inspections and to keep a register of all water related data and information. Moreover, the authority shares responsibility for irrigation with the Ministry of Agriculture and for environmental protection with the Environment Quality Authority (PWA 2011).

In 2008 Dr. Shaddad Al-Attili was appointed Minister of the PWA. Attili leads the permanent status negotiation on water with Israel, and is currently leading a Reform Plan for the water sector in Palestine. As part of the data collection for this thesis I interviewed Dr. Attili in December 2010.

4.1.4 Jordanian Regulation of Water Resources and the Secretary General of Water and Irrigation

The Ministry of Water and Irrigation (MWI) is the official body responsible for the overall monitoring of the water sector, water supply and wastewater system and related water projects in Jordan, this includes planning and management, the formulation of national water strategies and policies, research and development, information systems and procurement of financial resources. Its role also includes the provision of centralized water-related data, standardization and consolidation of data.

The MWI was established by the Jordanian Government in 1988 in response to Jordan's recognition of the need for a more integrated approach to national water management. Since its establishment, MWI has been supported by several donor organization projects that have assisted in the development of water policy and water master planning as well as restructuring the water sector (MWI 2011).

Engineer Maysoon E. Zoubi was appointed Secretary General of the Jordanian Ministry of Water and Irrigation in 2008. Since then she has been administering the water issues of the peace treaty process. She is in charge of Jordanian participation to the EXACT. As part of the data collection for this thesis I interviewed Mrs. Zoubi in December 2010. Mrs. Zuobi also responded to follow-up questions by email in May 2011.

4.2 Elements of Power Politics

In this section I address the first hypothesis (H1) outlined in Chapter 2 in order to establish whether this explanation finds support in the empirical evidence. I commence with outlining the observable implications[25] of H1, before I proceed to analyzing the data material.

[25] Before proceeding to the analysis I address the observable implications of the two hypotheses. "Social science conclusions cannot be considered reliable if they are not based on theory and data in strong connection with one another and forged by formulating and examining the observable implications of a theory" (King et al. 1994: 29).

4.2.1 Outlining the Observable Implications of H1

As mentioned at the outset of this chapter, H1 explains the absence of war over water from a neo-realist standpoint: "Water is not a sufficiently important issue to go to war over in a region where high politics dominate". The term *high politics* is used to categorize matters that are vital to the very survival of the state, hereunder national and international security concerns. By definition a high politics issue is an issue state leaders would be willing to go to war over in order to ensure the survival of the state as such.

From a neo-realist point of view the trio of Jordan, Israel and the PA would be considered a regional entity or a part of a regional entity where Israel takes the position as the powerful and dominant hegemon. As the Palestinian territories are de facto occupied by Israel, and consequently largely dependent on the support of the international community to claim their right to establish a sovereign state, declaring a war over water resources against Israel would not be a rational action. Additionally, the news network Al Jazeera's recent release of "the Palestine Papers" demonstrated "the embarrassing lengths that Abbas was willing to go to achieve a peace agreement with Israel" (Rosenberg 2011). Even though the late Jordanian King Hussein stated in an interview with *the Independent* on 15 May 1990 that water was the only issue that could again bring Jordan to war with Israel, such an outcome is unlikely as Jordan is far from having the military capacities to take on Israel in a war. The 1994 peace agreement between Jordan and Israel is another important factor indicating that a war between Israel and Jordan is unlikely. Israel on the other hand, the dominant hegemon who is in possession of large parts of the three countries' shared water resources does not have any real incentive to go to war over water. The trio can thus be seen as a case of "hegemonic stability" with regards to water issues.

In Chapter 3 I established that there has not been any outbreak of war with water being the direct triggering cause, and that what researchers actually find is that water scarcity more often leads to cooperation than to conflict. In general, neo-realists assume that states will engage in cooperation with other states only if they believe that the cooperation will result in absolute gains for their part. For Jordan and the PA such absolute gains could include access or rights to information on water resources, access or rights to actual water resources,

technical assistance to exploit or improve exploitation of water resources and attention and support from the international society in dealing with the water scarcity issue in their respective countries. For Israel who already is in possession of large parts of the water resources, the absolute gains which could possibly result from engaging in cooperation is an improved reputation within the international community, as well as a "normalization" of its political relations to other Arab states. It is also important to note that strategic alliances with Great Powers (i.e. the US) could affect the incentives and the direction of cooperation.

The observable implications of H1 can be summarized as follows: Israel, the regional hegemon supported by the US, has access to sufficient water resources and does not consider water a matter of high politics. Water scarcity is a more critical issue to Jordan and the PA. This implies that control over water resources becomes a strategic advantage for Israel. Israel's involvement with these Parties on water management issues will thus not be characterized by a sincere interest in cooperation, as cooperation would imply loss of leverage.

4.2.2 Cooperation in lack of tangible results

When assessing the overall accomplishments of the MWGW, the Nordic Consulting Group (2003: 42) states the following:

> If the intention [of the projects] was to promote changes in the regional imbalance on water issues, then Israel has been the strongest party to the process and project outcomes have so far not changed this situation.

The Nordic Consulting Group also points to specific project outcomes that can be seen as indicators of the lack of actual accomplishments of the MWGW. In some cases it seems that Israel has been more occupied with displaying to the international community that they are in fact engaged in cooperation with the PA and other regional actors, than actually valuing the cooperation itself. Attili's statement confirms this perception: "Israel wants to keep it

technical; purely technical and they don't want a project that touches upon allocation or joint management. They want to keep their control on the resources" (Attili 2010 [interview]). To exemplify one can look to the *The Regional Comparative Study* which was an attempt to bring Syria and Lebanon into the process of the MWGW. Israel's public announcement of a joint meeting between the five parties made such cooperation with Syria and Lebanon in the context of MWGW come to a halt (NCG 2004: 41). Syria and Lebanon pulled out following this announcement, due to their official policy stating that "Arab states should not discuss functional matters with Israel prior to settlement of core political issues" (Libiszewski 1997: 392). With the DOP as well, the Nordic Consulting Group concluded that it gave Israel an opportunity to show publicly that they are a party to a political process with first and foremost Palestinians, without actually committing or dealing with core issues (NCG 2004: 41).

The Israeli Party has also on several occasions proven their lack of willingness to make sacrifices or to engage in the cooperation with the other Core Parties. For the *Water Atlas Project* Israel did not make any vital data available concerning water resources in the region and Palestinian Territories. On the other side the Palestinians had expectations that this process would provide them with access to the information that Israel holds. The Atlas Project produced a document which was neither widely distributed nor used. For Israel the key issue was to be a contributor to a process. Israel did not relinquish information that it considered of strategic importance to its bilateral positions and negotiations (NCG 2004: 40). Also with *The Waternet Project* the Palestinian Authority had hoped to gain access to Israeli data. Nonetheless they were unable to gain information regarding Israel's resource data except for the brief period when the regional node was tested (NCG 2004: 26). With regards to *The Waternet Project* the Nordic Consulting Group concluded as follows:

> While the overall objective of Waternet was to foster cooperation, the different parties sought to reap different benefits from the project. The Palestinians sought cooperation with Israel in order to gain access to information from Israel on water related matters. There was less need for the Palestinians to seek cooperation with Jordan because representatives from the PA had already visited Jordan on several occasions and had unrestricted access to reports. Israel did not need to foster regional cooperation to gain access to information. Rather, Israel sought to reap political benefits from being part of a multilateral peace process (NCG 2004: 28). Similarly, Jordan had less interest in water cooperation since it had access to Israeli information through other channels.

During the interview in December 2010, Attili confirmed that the Nordic Consulting Group's conclusion of 2003 is still valid:

> If you go through the EXACT project from 1995-2000, you find that the core parties established a project that really was supposed to be beneficial to the three of them. But when it came to the sharing of data the cooperation failed to establish this. One country decided to withhold their data for security reasons – this country was Israel (...). If you look at the cooperation from 2000-2010 you will find that only a few projects have been completed. A big problem comes from the lack of possibility to share data. People have started talking about not establishing a water databank, but instead water databanks [in plural]. This was when we started to lose the original spirit of the EXACT project. People proved not to be willing to cooperate when it came to sharing of data. This was when the problems with the EXACT started (Attili 2010 [interview]).

The Waternet Project has thus so far not served as a tool for exchange of information, to the frustration of especially the Palestinian Party. The Palestinian Party particularly expressed discontent about the fact that the objective of the project was to share water data, and the project failed to accomplish this. According to Attili, when cooperation is not producing results it is better to close down the project and start another which does not have sharing of water data as its objective. He also expressed that it is not cooperation with the Israelis that is the problem, but cooperation under the *pretense* of making accomplishments, while the results in reality are not producing (Attili 2010 [interview]). This lack of willingness from the part of the Israelis to make actual sacrifices and "invest" in the cooperation is an indication of support to H1. There is no absolute gain involved for Israel in sharing water data especially with the Palestinians, and for this reason they are not willing to make such sacrifices and risk losing leverage. But by publicly announcing that they are cooperating with the PA, Lebanon and Syria, they might gain an ameliorated image internationally.

The Israeli Party also expressed a general resentment towards the multilateral track, because reaching common solutions is difficult when one is representing the "minority party", as Shani states:

> In the bilateral discussions you come to more practical questions. You make decisions. In multilateral discussions you need to agree on consensus. If decisions were to be made by the majority, then Israel

> would lose in any vote [against the PA and Jordan]. It must be on consensus. That is one of the limitations of the multilateral track (Shani 2010 [interview]).

For this reason, the Israeli Party has attempted to subject most of the fundamental water related issues to bilateral discussions. In the bilateral track the Israelis have a de facto veto right and is more in control of decisions being made.

Another interesting statement made by Shani, it is that the lack of ambition and goals for the multilateral track which is actually the key to its "success":

> One of the keys to the success of the EXACT is that we don't try to solve the core problems. It is not made to replace the negotiations between the governments on core issues. You see, it supplies the atmosphere, but it cannot replace the official talks (Shani 2010 [interview]).

This again goes to prove support for H1. The Israeli Party does not see the Multilateral track as a platform to actually reach agreements that will contribute to solving the common water issues of the three countries. Establishing cooperative solutions is not the aim of the Israeli Party.

The Palestinian Party however, finds the lack of ambition frustrating, because lack of ambition also implies few accomplishments, and the donor parties to the Working Group are generally involved because they are hoping for political outcomes. When they see that these are not producing, they pull out as contributors:

> (...) when we try as Palestinians to bring up a project related to the Jordan River Basin, we find that the Israelis are taking a defense position that the Jordan River Basin is a bilateral issue, which shouldn't be dealt with multilaterally. This way we are having difficulties finding a project that involves Jordan, Israel and Palestine which makes sense, and which can be dealt with as a regional issue. Israel is now starting to take the position that the water issue of the Jordan River Basin should be treated as a bilateral issue, and that it is a permanent status negotiation issue. It is unfortunate that with this approach, the Israelis are minimizing the benefits of the EXACT. This has resulted in the withdrawal of several donors, like the Canadians and the British (Attili 2010 [interview]).

According to neo-realist theory, Palestinian involvement in the MWGW would also be for the absolute gains they might acquire. Funding from donor Parties represents such an absolute gain. If donors pull out because of the Israeli Party's lack of willingness to invest in the cooperation, then this means that the Palestinian Party is missing out on possible absolute gains. Even though the Palestinian Party has expressed frustration due to the lack of Israeli will to invest, we have not seen clear indications that water is considered a high politics issue for the Palestinians either. There is a long way from threatening to pull out from a multilateral working group to declaring war or an intifada over water. Different factors could explain this according to neo-realist theory; either water scarcity still isn't severe enough in the oPt, or the PA is well aware that it has no chance whatsoever to challenge the military hegemon of Israel.

When it comes to the Jordanian Party, what might seem surprising at first glance is that their perception of the possible outcomes of the cooperation is rather similar to the Israeli perception:

> The EXACT will not produce additional amounts of water per se. If you look at the EXACT it is not a project that will help produce big amounts of water. (...) The EXACT will not solve the water problem (Zoubi 2010 [interview]).

Jordanian Authorities have close ties with the US and is largely dependent on US aid money for their national budget. As mentioned under the section on observable implications of H1, Great Power politics might influence state's behavior if any of the Parties are allied with or dependent on the US. It is not unlikely that the Jordanian perception of the cooperation might be a result of these ties[26], and that as a strategic alliance partner of the US in the Middle East they are counting on US assistance if the water scarcity situation aggravates further. Thus no need for either expecting or pushing for the establishment of cooperative solutions.

[26] In addition to providing assistance to the water, health, economic growth, education, and democracy & governance sectors in Jordan, USAID/Jordan implements a multi-year, policy-based balance of payment program. This assistance is provided in the form of a cash transfer. During 1997 - 2006, USAID has provided $1.163 billion for the cash transfer program to Jordan (USAID 2007).

4.2.3 The Uneven Balance of Power, Great Power Politics and Water as a Strategic Resource

It is evident that the uneven balance of power among the Core Parties and the fact that neither the Palestinians, nor the Jordanians have much leverage encountering the Israelis at the negotiation table is affecting the outcome of the cooperation. At an EXACT meeting which took place in Jordan in June 2010 this problem became evident; the Palestinian Party was definitely the most eager to set up projects and making accomplishments through the MWGW. The Jordanian Party was supportive of the Palestinian suggestions, while the Israeli Party had a very "laid-back" attitude towards suggestions and emphasized that all projects would need to be thoroughly discussed and evaluated before even considering initiation. The Palestinian Water Minister explains the negotiation climate by stating the facts:

> In the case of Israel-Palestine the occupation is still there. No matter how you see it, we remain the occupied and they remain the occupier (Attili 2010 [interview]).

It does not matter how much one insists on getting projects up and running if this is not in the interest of the dominant hegemon.

The United States serves as the gavel holder for the MWGW. Due to its position internationally and regionally in the Middle East (as Israel's most important ally and as substantial contributor to the Jordanian National Budget) their possibility of influencing the direction of the cooperation is highly present. The Parties' perception of the US contribution as gavel holder is not unanimous, but the common feature of the descriptions is that the US has not taken advantage of its role as gavel holder to push through solutions:

> From what I see they function as a sort of a mediator. They run [the EXACT meetings], but I'm not sure how dominant they are. They assist us in agreeing on the agenda, they try to be fair and to see that everything is going well. They do a good job, they don't force (Shani 2010 [interview])

> You know in this project they are very helpful, and they have the power to get these people together and meet. And in Jordan per se, the United States are very dynamic. 80-85% of the water projects are

> financed by USAID money, and it is grand money. They are very helpful in the region, bilaterally: from government to government (Zoubi 2010 [interview]).

> (...) when Israel objects to a project, people don't put pressure on Israel; because this is the environment of the EXACT. I think the donor countries and the gavel holder can play a better role (Attili 2010 [interview]).

The US reluctance to put pressure on Israel to make sacrifices in negotiation with the PA might very well be a result of the Israel Lobby's[27] influence on US foreign policy, as revealed by Mearsheimer and Walt in their article "Washington has given Israel wide latitude in dealing with the Occupied Territories, even when its actions were at odds with stated U.S. policy" (2006: 31). This paradox is explained by the Israel Lobby's unmatched ability to play the game of interest-group politics, made possible by the multiple channels of influence that the US' divided form of government provides (Mearsheimer & Walt 2006: 42). Due to the lobby there is now a strong norm against criticizing Israeli policy, and the Jewish-American leaders rarely support putting pressure on Israel (Mearsheimer & Walt 2006: 41). A central point to Mearsheimer and Walt is that the Lobby pushes the US to support Israeli policy unconditionally, even when this goes against US national interest. Even though it would have improved the US' image in the Arab world had they been able to push through an agreement on Palestinian water rights or a joint water management regime between the three countries, they will not do this as long as Israeli Authorities oppose. As long as keeping water data to themselves provides Israel with leverage, Israel actually has a "counterincentive" to engage in cooperation.

Finally, a last point indicating that the neo-realistic explanation does find support in the empirical evidence concerns Uri Shani's (2010 [interview]) statement on the importance of water as a resource for Israel:

[27] The Israel Lobby is defined as a loose coalition of individuals and organizations that actively work to shape U.S. foreign policy in a pro-Israel direction. The core of the lobby consists of American Jews who make a significant effort in their daily lives to bend U.S. foreign policy so that it advances Israel's interests (Mearsheimer & Walt 2006: 40).

> (...) Abu al-Assaid said to me that when they have the Palestinian state it will be kind of crippled because they will not have sovereignty on their sky, they will not have an army strong enough to defend themselves, so they will try to charge sovereignty on water. For them water will be the symbol of sovereignty. Because of this water is a core subject for them. For Israel, water is just another subject (...).

Many things can be said about this statement. I am not questioning the fact that the Palestinians wish to establish sovereignty on their water resources. However, how one should interpret that "water is not a core issue for Israel" is a different issue. It might be true that Israeli Authorities are not so concerned about water scarcity, as they are currently building desalination plants along the coastline[28] and they do not have problems financing such solutions. However, from a neo-realist standpoint, knowing how desperately the PA needs and wants to claim their rights to the waters of the Mountain Aquifer of the West Bank, the control of this resource as mentioned becomes an issue of leverage and a strategic advantage for the Israeli Authorities. Whether or not Israel would actually be willing to go to war over water resources is a highly debated issue in the research literature. For example Beaumont (1997: 368) states that "What becomes obvious then is that Israel has probably been stressing its supposed water needs for strategic reasons in case it wishes to take military action over some issue. Politically it is more acceptable to claim to be preserving the water needs of one's own people than to be invading another country to gain control of land". During the interview in December 2010, Uri Shani however expressed his confidence that water will not be an issue hindering peace between Israelis and Palestinians: "I'm sure water will not be the main obstacle preventing peace. We will solve it. Maybe not me, but it will be solved".

4.3 Institutions Matter

4.3.1 Outlining the Observable Implications of H2

The founding assumption of H2 is the neo-liberal argument that states will cooperate when it is in their common interest to do so. In general, neo-liberals argue that states will cooperate

[28] In 2007 Israel began operating its first large-scale desalination plant, and currently has plans for producing between one-third and one-half of freshwater consumption by 2015 (Drezin et al. (2008) as cited in Fischendler et al. forthcoming).

when this is mutually beneficial to them, and relative gains are considered a sufficient incentive to cooperate. Especially with transboundary water resources, the risk of not cooperating is a situation of “tragedy of the commons”. Knowing that water is a scarce resource and that the problems related to water scarcity will only worsen in the years to come, the neo-liberal prediction would be cooperation rather than conflict over water in the Middle East since cooperative solutions imply a considerable reduction of costs. In addition to common interests, “trade, treaty and technology” are factors neo-liberals argue to have a peace-inducing effect on bilateral relations. Trade leads to economic interdependence which gives each party a stake in the economic well-being of the other. Intergovernmental institutions (referred to as “treaty” in section 2.5.2) will have a positive effect on cooperation because they can mediate among conflicting parties, reduce uncertainty by conveying information, they assist in problem-solving, they have a socializing and norm-shaping effect, and they generate narratives of mutual identification (Russett & Oneal 2001). The technology-argument is based on the idea that population growth leads to a modernization of the industry, and better utilization of resources, making resource scarcity *nihil ad rem*. If the neo-liberal explanation for the absence of war over water has solid grounds, we would expect to see some of the above mentioned indicators in the empirical evidence.

To sum up one can say that if the neo-liberal explanation for the absence of war over water has solid grounds this is a result of the Parties' common understanding that water is considered such a vital resource that they recognize that cooperation is the only viable option. Under the umbrella of the MWGW this perception would materialize in serious efforts to establish a dialogue leading to durable cooperative solutions.

4.3.2 A Genuine Interest in Cooperation

The Nordic Consulting Group (2004) concluded that the Parties considered the expansion of the scope of the Declaration of Principles (DOP) as a crucial and vital step expressing a genuine intention to undertake cooperation. The Core Parties confirmed that the DOP would not affect or alter in any manner, the bilateral or other agreements or undertakings among them. Nor would it prohibit or constrain any bilateral arrangements, understandings or

agreements aimed at enhancing cooperation in water-related matters. This latter confirmation was crucial for the Parties as cooperation on new and additional water resources is considered to be one out of many aspects in the field of cooperation. The Palestinians for example, confirm that priority in this area is to achieve cooperation on all shared water resources, including new and additional resources. As such the DOP elaborated a mechanism for cooperation even though it was not legally binding (NCG 2004: 25).

During the interviews all Parties put strong emphasis on the fact that even during times of political crisis (i.e. the Intifada[29]) the processes continued and the dialogue among the three Core Parties was maintained with technical level meetings centered on joint agreed project activities. Thus as a tool for promoting cooperation, the projects have proven their relevance as far as Israel, Jordan and the PA are concerned.

> Something that has been beneficial with the EXACT even in the difficult period [the intifada], is that you find Israelis, Jordanians and Palestinians sitting around one table. We have repeatedly stated that we have to continue doing this because we provide an example, especially now that the other multilateral track projects have been stopped (Attili 2010 [interview]).

The Waternet Project developed in 1996 was the first joint initiative by the participating parties to implement parts of the Declaration of Principles. It is important to note that among the various working groups established under the Madrid process only a few were able to show real tangible progress of which the MWGW is one of the more prominent ones (NCG 2004: 49). According to Shani, Attili and Zuobi this is a consequence of the respective views of their Authorities of water being a "different" resource which does require international cooperation.

> We are there not because we volunteered, but because the cooperation is important to us (Uri Shani 2010 [interview]).

[29] The second intifada (Palestinian uprising) lasted from 2000-2006. It is claimed to have officially ended in November 2006, even though there is still ongoing violence.

> This is the only program that has proven to sustain during the 15 years, even during the intifada. We meet in the same spirit. It is there, for 15 years we have had 30 meetings (Zoubi 2010 [interview]).

The biannual meetings have also resulted in the establishment of friendship among the delegates. Not only among the high official representatives, but also among the participants on the technical level (Shani 2010 [interview]; Attili 2010 [interview]; Zoubi 2010 [interview]). This is in line with what Dinar (2008) refers to as the formation of epistemic communities[30], which may positively influence policy makers. The members of an epistemic community are often in possession of knowledge which gives them a certain authority to advice on policy development and implementation concerning issues that the politicians are not necessarily acquainted with.

4.3.3 Water – "A Different Resource"

Distinctive for all three Parties during the interviews was that their perceptions of the problem of water scarcity and its consequences were very similar and coordinated. All three parties agreed that the Middle East is suffering greatly from water scarcity, and that the research community's prediction that this is a situation that will worsen in the years to come is correct. Especially dominant was the conviction among the parties that climate change will have a major impact on the water situation in the three countries, because of the longer and more recurring drought periods that are expected. On the question of why cooperation between the parties on water seemed to have a better survival capacity than cooperation on other issues, all parties replied that the cause for this was the specific qualities of water as a resource, being different than other resources – relatively inexpensive, but completely indispensable. These specific characteristics of water are according to the parties the reason why even when the political and diplomatic relations between the three countries have been under the most stress (i.e. under the second Intifada) the Parties have continued to meet and discuss water issues in the context of EXACT in a friendly tone. All three Parties expressed a fear of what the consequences would be if they did not find a solution to the water issue. The Jordanian Party went the furthest by expressing an actual fear for "conflict over water" as a potential result if pressing issues were not dealt with (Zuobi 2010 [interview]).

[30] Ref. to section 2.5.2 where Dinar's argument about epistemic communities is presented.

> (...) Water is more demanding. You need to supply water, period. This necessity brings more flexibility. It is easy to see that in economy and in development, you don't agree. Even on the environment. Ok, you don't agree, and you are not willing to change your standpoint. But with water, even if you don't agree you still need to drink. This brings a much more practical attitude (Shani 2010 [interview]).

> We have to go through with this project, and we have to keep water out of the conflict. This is why we are pushing towards finding a solution. Water is solvable, not like other issues. A solution to the water issue will be a win-win solution for all parties (Attili 2010 [interview]).

> The EXACT is focusing on the most challenging issue in the Middle East, which is water. Believe me, most of the countries in the Middle East are running out of water. If this problem is not handled well and peacefully, this may lead to a war (Zoubi 2010 [interview]).

These three statements made by the interview objects go to support H2, because they emphasize the importance of water as an explanatory factor for cooperation. The qualities of water both as a fundamentally important resource for people's survival, and as a resource that induces a practical approach, along with the risk of conflict over water if the issue is not solved are all arguments in favour of water being considered important to the point of perceiving cooperation as the sole option.

4.3.4 The Role of the Donor Parties

Another important point to emphasize is that all parties pointed to the role of the donor countries as key players in keeping the cooperation alive. At times when the cooperation has been under stress due to different factors, the donor countries have played a supporting role making sure the EXACT stays on its feet. Attili pointed to the current situation of the EXACT Working Group and explained that not long ago the Palestinian party had considered pulling out of the Working Group because they felt that the cooperation was not producing enough results. However, the Norwegian diplomats involved in the cooperation had convinced the Palestinian Party that they would reenter the Working Group as a donor party and commit their efforts to lifting the cooperation to a higher level, also producing political results. This

had been of decisive significance for the Palestinian party's decision to stay in the working group.

> Water has a special nature. The people in the region are suffering from scarcity of water, and water is part of the conflict. But you find a certain determination from the donors to keep this project alive (Attili 2010 [interview]).

This argument goes in support of the neo-liberal assumption that "treaty" (international institutions, organizations, agencies, treaties and agreements) can promote changes in national policy and reinforce cooperative solutions. This also reflects the fact that the donor parties also consider water to be highly decisive issue in the Middle East, and that putting donor money and efforts into the MWGW is worthwhile because this hopefully contributes to the avoidance of conflict. The will of the international community to keep the project (The MWGW and the EXACT) going, is an indication of support to H2 because it reveals a conviction that the water issue is important enough to invest time, efforts an donor money in.

4.3.5 The MWGW and the Peace Process

When it comes to the evaluation of the effect the MWGW has had on the peace process, there is some uncertainty among the parties:

> Unfortunately [the MWGW] has no effect [on the Peace Process] because there is no link between multilateral and bilateral. It is one of the Palestinian demands that there should be a link. We cannot discuss the Jordan River Basin through bilateral negotiations when it is a multilateral basin (Attili 2010 [interview]).

Meanwhile, all Parties agree that had the MWGW been functioning more optimally, the effects on the Peace Process would be positive.

> To have a working group like this is important, because if you don't face each other and discuss you will never reach a solution (Zoubi 2010 [interview]).

> The Israelis are realizing now, that the Palestinians do have right to water, but the argument is on the source of the water. The Palestinians say that they have a right to the water in the Jordan River, but the Israelis say that there is no water in the Jordan River. That's fine, but if you have 50 you divide it between the two parties... but this is between them (Zoubi 2010 [interview]).

> It could be one of the catalyst factors that could contribute to a solution once there is a common interest, and I do think there is a common interest in avoiding pollution and protecting the groundwater aquifers (...) (Attili 2010 [interview]).

All Parties have strongly emphasized the need for and the usefulness of an open and frank dialogue in an unofficial setting such as the MWGW and the EXACT meetings. However, the Peace Process stagnated during the second intifada. This is also an issue emphasized by Fischendler et al. (forthcoming) who describes the period prior to the second Intifada as a time of momentum for cooperation between Israel and the PA, but with the outbreak of the Intifada the Israelis opted for unilateral solutions "[a cooperative approach was] a preferred spatial strategy from both an environmental and economic perspective, but was deemed unworkable from a political and security one" (Fischendler et al. forthcoming: 16-17). Following the outbreak of the Intifada, Israel retreated from its cooperative efforts and shifted to the adaptation without cooperation strategy as the cost of cooperative choices drastically increased during political turmoil, and the potential benefits of donor money dissipated (Fischendler et al. forthcoming: 19).

To the Palestinian Party it is the lack of tangible results of the cooperation which is the explanatory factor for the missing positive effect on the Peace Process. Unfortunately, this argument weakens H2 as it is an indication that the efforts put into the MWGW have not been deep-rooted enough to positively affect the Peace Process.

4.4 Lessons Learned

There has been no war over water in the Middle East, not even during high tension periods when the water scarcity issue has been severe in Jordan, Israel and the oPt did a conflict erupt

over water. According to Beaumont (1997: 356) the reason why "water wars" are still (despite the absence of actual water wars) considered a potential security threat by national and international actors, is that "the concept of environmental security has now entered the military vocabulary. In the post-Cold War period, military establishments have sought evidence that conflicts will still occur, and have thus focused sharply on the novel idea that water might be a likely cause of war". Beaumont therefore claims that it is not the actual threat of a water war that affects the inclusion of water scarcity on the security strategy agendas, but merely the incorporation of the idea of this threat within the military establishment.

Now, after investigating the case of political relations between Jordan, Israel and the PA with regards to their shared water resources – how can we explain the absence of war over water between these countries?

The importance of the dialogue between the three countries in preventing conflict has been emphasized by all Parties. They continued to meet under the "umbrella" of the MWGW to discuss possible solutions, test projects etc. concerning access to freshwater resources and wastewater treatment, even during times of high tension such as the Intifada. This is the strongest argument in favour of the H2 explanation of the absence of war over water. It goes to indicate that water is such an important issue that the Parties were able to put aside the hostilities and negotiate and discuss cooperative solutions because water is vital to the survival of their respective populations. The strong emphasis on the importance of this dialogue was a central issue for all three interview objects, and this was also put forward by the Nordic Consulting Group's report (2004). Peters (1999: 93) also points to this fact when stating that:

> (...) the multilaterals have offered Israel and the Arab world an alternative diplomatic space to engage in low-risk communication and exchange, to develop new forms of cooperation, and to generate creative solutions and plans for the future – for the first time – on a regional level.

The MWGW seems to have had an influence on norms and perceptions among the Parties to the cooperation. Shani (2011 [interview]) insinuates that going to war over water is out of the question because of these commonly developed norms:

> Today I would say the situation is more stable especially between Israel, Jordan and Palestine because we have reached the understanding that finding common solutions is more fruitful. We will gain more from this type of approach.

However, the lack of tangible results stemming from the cooperation is another prominent feature of the MWGW and the EXACT cooperation, and it is also the strongest evidence in favour of the H1 explanation for the absence of war over water. Neo-realists argue that ”antagonistic parties in the high politics of war and diplomacy, tend to be incapable of cooperating even in the realm of low “economic” and welfare politics”. Libiszewski (1997: 387) argues that when a dispute over water resources is embedded in a larger political conflict, the former can neither be conceived as discrete conflict over a resource nor be resolved as such. The Parties to the MWGW insist that water is and should be treated as a separate subject to the conflict between Israel and the PA, notably because it is such a vital resource. But viewed from a crude political perspective, the work of the water group in itself did not produce many concrete decisions such as formalized treaties or functional cooperative projects. In the establishment of the 1994 Peace Treaty between Israel and Jordan, the settlement of water issues was enabled by a clarification of each other’s water rights and thus settling the distribution conflict. The PA and Israel have not been able to settle the dispute over water rights – not to the waters in the Jordan River, nor to the waters of the Mountain Aquifer. This has by many been presented as the main obstacle to solving the water issues between Israel and the PA.

The power asymmetry and the hegemony characterizing the relations between the three Parties to the MWGW have definitely impeded incentives to making sacrifices and to establish a functioning water regime. This imbalance has also worked as an incentive for Israel to opt for unilateral solutions – a strategy termed “Unilateral Environmentalism” by Fischendler et al (forthcoming). Technological development might be an explanatory factor

for the Israeli Party's currently more relaxed approach to the water issue. The unilateral investment in desalination plants seems to have relieved some of the Israeli stress to control water resources.

By taking a deeper look into the causal mechanisms between water scarcity and international relations it has become clear that the linkages between these two factors are indeed intrinsic, and it is difficult to provide a clear answer of cause and effect. The explanation for the absence of war over water however does seem to lie somewhere between the two proposed hypotheses, with stronger support for H1 than for H2. The lack of tangible results outweighs the emphasis on the importance of dialogue. Water scarcity has not proven to be important enough, especially to the Israeli Party, for them to be willing to make sacrifices and engage full-heartedly in cooperative solutions. Actions speak louder than words, in politics more than anywhere else.

The lack of functional cooperative solutions however, implies that the oPt and Jordan will continue to suffer from water scarcity in the years to come. They do not have the financial capacities of Israel to establish unilateral solutions such as high cost desalination plants. But for now, the situation of water scarcity in the three countries is currently a question of not having enough water for agricultural use (Brown & Crawford 2009). Water scarcity has yet to become a question of life and death, as "most families, even in the remote places have water to drink for the days to come" (Shani 2010 [interview]). But if the predictions on climate change prove to be correct, and we see droughts occurring more frequently and over longer time periods in the Middle East, it goes without saying that this issue could develop into a question of life and death for some of the region's inhabitants.

Prediction in the social sciences is a highly controversial subject[31], and I will not attempt to maneuver the art of prophecy. However, if the day comes when the inhabitants of either Jordan, Israel or the oPt do not have sufficient water to survive because "the well eventually did dry up", the question of water scarcity inevitably becomes a question of "high politics". If

[31] Social scientists have generally failed to predict the most important events in history, such as for example the fall of the Soviet Union.

and until this happens, *time* may have been the explanatory factor for the absence of war over water.

5. Conclusion

For several decades scholars have been predicting war over water to break out in the Middle East. It must be considered a paradox that even though the research literature today has turned its focus towards cooperation instead of conflict over water, the idea that war over water is still dominating the security strategies of certain states and the policies of international organizations. The issue of why no war over water has occurred, despite the pessimistic predictions of the Environmental Security writers, is an issue not many political scientists have addressed. It might even seem as if there has been a direct transition from the assumption of conflict as the natural consequence of water scarcity, to an acceptance of cooperation as its actual consequence. In this thesis I have attempted to address the issue of this "missing link" between thorough descriptions of the condition under which a war over water is likely to break out and the absence of such a war. The method I have used was to take a deeper look into two cases of bilateral relations. Israel-PA is a case where a war over water is highly probable according to Homer-Dixon's conditions. Israel-Jordan on the other hand is a case where the outbreak of conflict is rather improbable. I have interviewed key policy makers from the three countries to get their perspectives on the situation, and I have completed the interview material with scientific articles and third party reports on the accomplishments of the MWGW.

With different theoretical approaches as base arguments I developed two hypothetical explanations for the absence of war over water. H1 was based on the neo-realist idea that water is not considered a high politics issue by the Parties involved, and has thus not been important enough to go to war over. H2 was based on a neo-liberal assumption that all three Parties recognize water as a resource so fundamental for people's survival, that cooperation to solve the water scarcity issue is the only viable option. Through my analysis of the empirical evidence I found that the relations between Jordan, Israel and the PA with regards to water issues are highly complex phenomena. The three countries are Parties to the Multilateral Working Group on water, a platform for cooperation and exchange of ideas established as a part of the Peace Process in the early 1990s. This cooperation has stayed operative, despite the closure of the other Multilateral Working Groups, and despite the difficult relations between Israelis and Palestinians during the second Intifada. I have investigated the Parties'

perception of this cooperation, and I have assessed the accomplishments and the non-accomplishments of the MWGW and the EXACT Committee, in order to establish insight on the causal mechanisms explaining the absence of war over water. Despite the fact that international relations between the three Parties have proven to be rather complex and that addressing the direct links between cause and effect has constituted a challenge, I conclude that H1 finds more support than H2. The strongest argument in support of the neo-liberal explanation of H2, that water is considered a vital resource too important for people's survival to fight over, is that all three Parties stayed in the Working Group and kept meeting biannually even during the second Intifada. This indicates a strong will to cooperate and a belief that cooperation is the ultimate solution.

The MWGW however has not produced results in terms of solving any of the three Core Parties water scarcity issues. The greatest deception must be said to be the failure to accomplish the main goal of the EXACT project, notably to create a common water databank giving all three Parties access to information on water quantity and quality in their common rivers and aquifers. The Israelis' reluctance to publish their data caused this project to fail. When it comes to politics, actions do speak louder than words. If it was so that the Israeli Party strongly believed that cooperation is the necessary and only viable option, they would not hesitate to the point that they have on providing water data. This is the empirical evidence providing the strongest support for H1, as it reflects the fact that water is not a sufficiently important issue for Israel to sacrifice the strategic negotiation advantage this secrecy constitutes.

Israeli reluctance to provide water data has caused frustration especially in the Palestinian camp, and all three Parties seem to have had differentiating perceptions of what the goal and the purpose of the MWGW should be. All of these factors however, have not lead to the outbreak of a war over water – a supplementary indication that water is currently not sufficiently important to fight over.

In the analysis I concluded that even though water, till this day has not gained sufficient importance to be considered a matter of high politics, this does not permit us to claim that a war over water will never take place. If the day comes, when the "well actually dries up" and Middle Eastern governments no longer can ensure daily drinking water to their populations, the question of access to freshwater resources will definitely climb upwards on the political agenda. Making predictions in political science has proven to be a dangerous game, as scholars usually prove to be wrong when anticipating future events. When dealing with complex social phenomena such as international cooperation and conflict, which obviously depends on so many different factors, the art of prophecy is further complicated. Regardless of what the future brings, needless to say that water as *the source of life* has the potential of causing conflict, and that there is a wide range of options available for those who wish to avoid such outcomes.

Central to the future of bilateral and multilateral relations, is the role taken by the US and the other donor countries. An important finding in this analysis was that the positions taken especially by the US and to some extent other donor countries have the potential of directing the cooperation. If strong efforts are made by the international community with the US in the lead, it should be possible to establish a functioning water regime. The spring of 2011, characterized as "The Arab Spring" has seen dramatic changes in the regional landscape in the Arab world. After decades of apparent stability, popular uprisings have led to optimism for a democratic transition in Egypt, to brutal violence and fear of state collapse in Libya (Anderson 2011). The unrest caught most people by surprise, both inside and outside the region, and has fundamentally upended beliefs about the Arab world. High unemployment, low purchasing power (poverty) and discontent with inadequate governance have been pointed to as main factors causing the popular uprisings. It goes without saying that if the populations of the Arab countries are willing to demonstrate and topple their leaders because of unemployment; they would not hesitate to do the same for drinking water. For the sake of peace, stability and the wellbeing of the populations of the Middle Eastern countries, the aggravating situation of water scarcity is an issue that needs to be addressed.

5.1 Advice for Future Research

As mentioned in section 2.5.2 a popular approach to research on "water cooperation" in recent years has been to conduct quantitative analyses on the factors inducing cooperation, river treaties and water management regimes. Insight from this research on the political relations between Jordan, Israel and the PA with regards to their common freshwater resources might prove useful for creating and including new variables in such aggregated analyses. Song and Whittington (2004) mentioned in their study that they were unable to include variables containing information the level of resources riparians devoted to the treaty negotiation process, the assistance of outside parties in aiding the negotiation process, and level of funding from parties outside the river basin for implementing the provisions of the treaty in their study. The results of my analysis indicate that these variables do in fact influence the possibilities of establishing treaties. The same goes for the power asymmetry between the Parties sharing the resources.

The empirical evidence and the analysis resulting from this analysis might also prove useful for interpreting Israel's relation to other neighboring countries (i.e. Syria and Lebanon) with regards to their common water resources. As mentioned in section 3.2 Syria and Lebanon are not de facto suffering from water scarcity as per today. But if the estimated demographic changes and the predicted environmental changes materialize, water scarcity will hit these countries as well in the years to come. If the situation produces that Israel is the only country in the region with sufficient freshwater resources, with its surrounding neighbors suffering from scarcity it is needless to say that this will be considered provocative and unjust and that it might function as a supplementary destabilizing factor for Israel's relations with its neighbors.

Another issue, actualized by the events of the Arab Spring is the possibility of internal uprising over scarce resources. Conflict over water resources might also materialize as intercommunal disputes if Middle Eastern Governments are not capable of providing their citizens with sufficient freshwater resources.

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Appendices

Appendix 1: Interview Contract Maysoon E. Zuobi

Interview Contract

I hereby authorize Sofie Hove Stene to use the interview material resulting from our conversation as empirical data in her Master's Thesis with the working title "Water Scarcity in the Middle East", to be handed in at the Department of Political Science at the University of Oslo 23 May 2011.

Oslo

Name

8/12-2010

Date

Appendix 2: Interview Contract Shaddad al-Attili

Interview Contract

I hereby authorize Sofie Hove Stene to use the interview material resulting from our conversation as empirical data in her Master's Thesis with the working title "Water Scarcity in the Middle East", to be handed in at the Department of Political Science at the University of Oslo 23 May 2011.

Oslo

Dr. Shaddad Attili
Minister
~~Chairman of the~~
Palestinian water
Authority

Name

8/12/2010

Date

Appendix 3: Interview Contract Uri Shani

Interview Contract

I hereby authorize Sofie Hove Stene to use the interview material resulting from our conversation as empirical data in her Master's Thesis with the working title "Water Scarcity in the Middle East", to be handed in at the Department of Political Science at the University of Oslo 23 May 2011.

Oslo

Uri Shani

Name

6.12.10

Date

Appendix 4: Interview Guide 1

Interview Guide 1

Warm up questions

- When did you first get involved with the Multilateral Working Group on Water?
- Can you give a short description of the EXACT Working Group (How often do you meet, how are the meetings organized, what are usually the main topics of discussion?)
- Can you give a brief description of what you consider to be the main problems related to water scarcity in the Middle East (or in Israel, Palestine, and Jordan)?

Main questionnaire

On EXACT and the Multilateral Working Group on Water

- What do you consider being the purpose of EXACT?
- Do you feel that the Exact Committee is serving its purpose?
- What does your government want to accomplish with EXACT?
- Do you think EXACT has accomplished any of these goals?
- If Yes: Which have been the major accomplishments of the EXACT Working Group?
- If No: What do you consider to be the reasons why EXACT is not accomplishing the goals it was set out to?
- How would you describe the negotiation climate in the EXACT Working Group?
- What would you say are the intentions of the other two core parties, with their participation in EXACT?
- How would you describe the role of the United States in the cooperation?
- How would you describe the role of the other donor countries?
- At the time of the establishment of the Multilateral Working Group on Water four other multilateral working groups were established notably on refugees, arms control and regional security, environment, and regional economic development, these working groups have all ceded existing. Do you have an opinion on why these working groups were closed down?
- What would you say are the causes for the persistence of the Multilateral Working Group on Water?
- Do you know of any other forums for discussion/cooperation on water in the region (bilateral/multilateral/formal/informal/local level/national level/existing or in the phase of planning)? Do you consider these more important than the MWGW for the future water security in the region?
- The problem of water scarcity in the Middle East is assumed by researchers to aggravate in the years to come as a per capita decrease in water is predicted. How would you describe the prospects for the water situation in the Middle East? Do you think water will become more central to international relations in the region, and specifically between Israel and Palestine?

On the Peace Process in general

- What would you say has been the impact of the Working Group on Water on the Peace Process in general?
- Do you consider Multilateral Working Groups as a possible means to reach a peaceful solution of the conflict in the Middle East?

Appendix 5: Interview Guide 2

Interview Guide 2 (follow-up)

In my thesis I present two hypothetical explanations for the absence of war over water in the Middle East:

1) Water is not a sufficiently important issue to go to war over in a region where high politics dominate.

or

2) Water is a resource which is fundamentally too important for people's survival to go to war over.

I would like to hear your opinion on which of these explanations you find more correct. You can either answer generally for the Middle East, or with PA-Israel as the reference.

I would also like to hear your prospects on the EXACT cooperation for the coming 1-2 years. In which direction do you believe the cooperation will go? Will you keep meeting twice per year? Will it be meetings with "high level participation" like in Oslo? What do you think the EXACT will accomplish in the next few years?